

# FLIGHT

The  
AIRCRAFT  
ENGINEER  
&  
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 654 (No. 27, Vol. XIII.)

JULY 7, 1921

Weekly, Price 6d.  
Post free, 7d.

## Flight

The Aircraft Engineer and Airships

Editorial Offices: 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telegrams: Truditur, Westcent, London. Telephone: Gerrard 1828

Annual Subscription Rates, Post Free

United Kingdom .. 30s. 4d. Abroad .. 33s. 0d.\*

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates

\* European subscriptions must be remitted in British currency

## CONTENTS

	PAGE
Editorial Comment	
The Prince of Wales and Aviation .. .. .	447
What France is Doing .. .. .	448
The Fate of the Airships .. .. .	448
An Empire Service .. .. .	450
At the R.A.F. Pageant: Formation Flying by Bristol Fighters .. .. .	449
The R.A.F. Aerial Pageant .. .. .	451
The Bristol Commercial Ten-Seater Biplane .. .. .	457
London-Continental Services .. .. .	459
Royal Aero Club Official Notices .. .. .	459
The Spad "Berline" S. 33 bis .. .. .	460
Entries for the Aerial Derby .. .. .	462
London Terminal Aerodrome .. .. .	463
Royal Aeronautical Society Official Notices .. .. .	464
Sidewind .. .. .	464
In Parliament .. .. .	464

## EDITORIAL COMMENT



THE Prince of Wales has the happy knack of saying precisely the right thing at the right time. As we know only too well, civil aviation in this country is not developing as we had every right to expect it would after the War, and it requires every assistance of word and deed to guide it along the right road. In these circumstances the thanks of all associated with the movement are due to our versatile young Prince for the heartening and prophetic words spoken by him at the recent dinner given to the Dominion Premiers by the Royal Colonial Institute. After dealing at large with subjects of Empire importance, the Prince came on to the subject of aviation. "There is no doubt," he said, "that the future of rapid Imperial inter-communication lies in the air, and I trust that the day is not far distant when civil aviation will have built up a great air organisation on the same lines as our mercantile marine, and that the delegates at the next Imperial Conference will travel by the Imperial air routes which are now being worked out.

"It is a subject that has boundless possibilities, and it is impossible for me here to develop them, but just as the roads of the Roman Empire failed to keep pace with the requirements of the times, so modern communications are insufficient for a Commonwealth of Nations which extends over all parts of the globe. The British Empire has more to gain from efficient air communication than any other State in the world, and I feel sure that no time will be lost in solving the very important problems which are connected therewith."

This is exactly the kind of utterance which is required from those who sit in the high places and is calculated to do an enormous amount of good by calling the attention of the world to the vast field of activity which lies before aviation. It is impossible not to agree with the Prince in his estimate of the future. Unquestionably, the future of Imperial intercourse does lie in the air, and the sooner development goes ahead and the more rapidly it progresses the closer knit will the ties which bind the Empire

## DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

July 16 ...	Inter-Varsity Air Race, Hendon
July 16 ...	Aerial Derby
July 29-31	Jacques Schneider Cup, Venice
Aug. 1-2	Cowes Seaplane Races
Aug. 27 ...	Entries Close for Coupe Deutsch
Sept. 4-11	Brescia Races
Sept. 10 ...	Pulitzer Trophy, Detroit, U.S.A.
Sept. 18 ...	Gordon Bennett Balloon Race
Sept. 25-	
Oct. 2	Aero Exhibition, Prague
Oct. 1 ...	Coupe Deutsch de la Meurthe
Nov. 12-27	Paris Aero Salon

together become. Further, never has there been a truer word spoken in connection with this great subject than when the Prince said that the British Empire has more to gain from efficient air communication than any other State in the world. That is the text from which we have been preaching for years past, and others with us. This Empire does, beyond all manner of doubt, stand to gain more than any other country by the swift and capable development of aerial enterprise, yet it is doing actually less than any other Great Power to utilise the enormous sum of knowledge acquired during the bitter stress of the War. We ended the great struggle with a substantial margin of air power over our Allies and our enemies alike. In material, in *personnel*, and in productive resources actually developed, we stood far ahead of any and had a priceless opportunity of securing a predominant place in civil aviation. Yet we have seen all those resources, all the accumulated experience of years, simply frittered away by a Government which has not known its own mind for three days together. It is a sad and somewhat sinister reflection that in place of holding the lead we had secured in the War, we are now reduced to the status of a third-rate Air Power, while on the civil side our activities are, in so far as the public services are concerned, limited to the cross-Channel routes.

We regard with gratitude the views expressed by the Prince and can only trust that his audience appreciated them as they deserved. As a matter of fact, we take heart from the fact that he was addressing the representatives of the young Dominions, who are keen to see Imperial communications improved, and who are themselves looking to the air for that improvement which is so essential to our continued existence as an Empire.

#### What France is Doing

In a long article, *The Times'* Paris correspondent summarises in an exceptionally able manner the tremendous efforts which France is putting forth to secure and hold the dominion of the air. The secret of success, as he says, lies in the fact that the authorities in whose hands rests the future of French aviation have realised that the surmounting of the obstacles to development depends, in the first place, upon a permanent alliance between the State and private pioneers. That appears to be a fundamental article of faith in France. Here the private individual or firm is told that he or they must work out their own salvation, and that the State is not particularly interested in anything they do—until, as in the case of the cross-Channel services, something happens to force the hands of the authorities.

We have not the space to quote extensively from the article referred to. We should very much like to reprint it in full, since it constitutes a very able summary of what has been done and is in the doing, in order that France may be first among the Powers of the Air. The whole gist of things may be summed up in the words of the correspondent himself, who, after detailing all that has led up to the present situation so far as France is concerned, tells us that French planes fly over Belgium, Holland, Germany, Czechoslovakia, Poland, Switzerland, Spain—and that is half Europe—and Northern Africa. One can step into a Paris taxicab, drive out to Le Bourget and fly with ease to Amsterdam (for Bremen and Scandinavia) or Croydon for 300 francs. Paris-Brussels costs half that sum. One can breakfast in one's

hotel in the Rue de Rivoli, be in Prague by 3 p.m., and in Warsaw in time for early dinner at the Bristol. One can dispense with land or sea services to famous watering places, Deauville, Biarritz, Cabourg, Bayonne, the Riviera, during their respective seasons, and go by air instead. From Toulouse one can fly down the east coast of Spain, over the Rock of Gibraltar, and across to the white Moroccan seaports in half a day.

It is, he remarks, the reality of the system which is the chief fascination of these sweeping flights over the leagues separating capital from capital. Ask for information as to this or that service, and you receive the prosaic little handbook of this or that *compagnie de navigation aérienne*—times of departure, cost, amount of luggage allowed, telephone address. The only romance about it is the Tauchnitz novel you take to read during the trip.

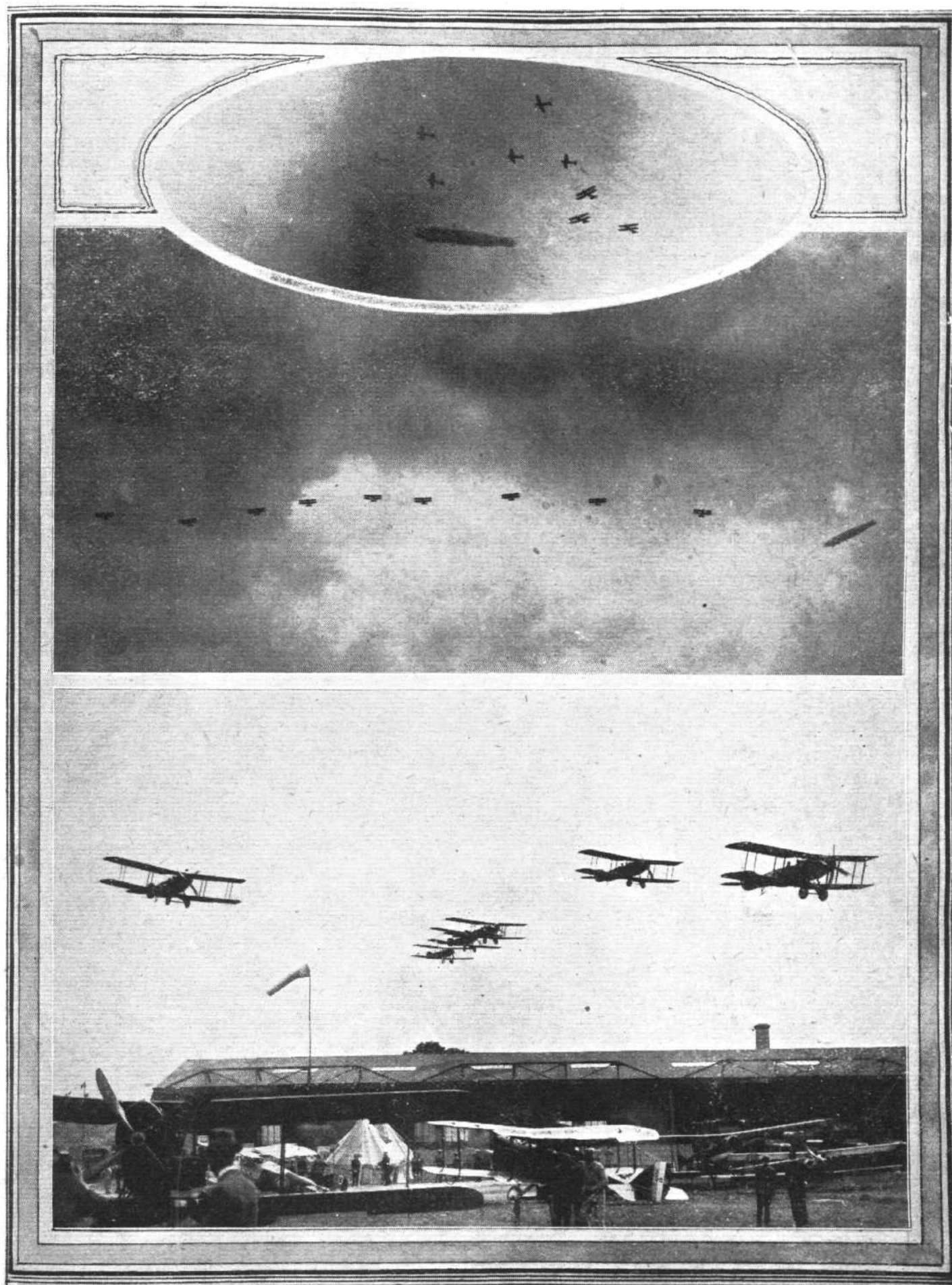
It is perfectly clear that here it is but dimly appreciated all that is being done in France to advance civil aviation as a means of transport. The amount of work and organisation which is being put into the task is simply colossal and it is producing an effect which will in a very short time place France in a position aerially from which it will be impossible to oust her. She will have definitely and irrecoverably established such a mastery of the air as the British Navy held over the seas at the outbreak of the War. And when we reflect that it was this country which at the end of the War had established an indisputable superiority in the air—a superiority which we could have maintained if our own Government had possessed the same vision as that of France—we are chastened in mind and in spirit. There is not the slightest excuse, either. All the reductions, all the parsimony towards civil aviation here has been on account of the need for economy in the nation's finances. Short-sighted economy, indeed. France suffered far more from the War than we. Her war debt per head of her population is greater, the amount required for reconstruction is an enormous sum—yet she has not suffered her air services to languish for want of the requisite assistance by the State. Either she or ourselves have been following a wrong policy—and we have not the smallest doubt as to which has been at fault.

#### The Fate of the Airships

August 1—Hansard said the 18th, but Hansard was wrong—has been fixed as the ultimate date for the scrapping of the airships, unless something happens in the meantime to give pause to the Government in its suicidal pursuit of alleged "economy." On that date it is proposed to hand over the ships to the Disposal Board and, if that is done, we know only too well the fate that will immediately overtake these vessels, upon the development of which no less a sum than £40,000,000 has been spent up to date. It would seem that, so far, the Cabinet is quite determined to scrap the airships. Not only has it been announced by the Air Minister that the date we have named marks the end of the period during which the Government will be responsible for charges in connection with the airships, but the responsible officers in charge have been given formal notice of these intentions.

Economy is a very good thing in its way, but it appears to us to be the worst of false economy to scrap out of hand the whole of a service—material, *personnel* and all, on which such huge sums have





‘Flight’ Copyright.

AT THE R.A.F. PAGEANT: Event 7, formation flying by Bristol Fighters. After each evolution they closed up into regular formation as shown in the top photograph. In the centre picture they are seen flying abreast past the Royal Box. Note R. 33 in both these photos. In the bottom picture the machines are about to land in the aerodrome.

been already spent, all because it is "impossible" to provide out of public funds a further sum not exceeding another million to complete all the tests which are necessary to place it beyond doubt whether or not the airship possesses the commercial possibilities which we believe are inherent in the type.

The decision, too, seems singularly inopportune, coming as it does at a time when other countries are experimenting with the airship, and are evidently impressed by its great potentialities. America has purchased one of the latest of our own craft and is building others. Germany, we know, still has complete faith in the type in spite of the series of disasters met with by her great rigids during the War—and Germany ought by now to know whether there is anything in the airship or not. France intends to make use of one of the surrendered German Zeppelins to carry on a trans-Mediterranean service. Italy still holds by the airship as a service auxiliary to the aeroplane, though we have no information as to commercial services. Thus it would seem that alone among the Powers we, who have done more than any, with the single exception of Germany, to develop the big rigid type, are about to throw to the winds the whole results of the research and expenditure incurred during the War years. Of course, it may be that something may happen to reprove the ships between now and the first of next month, but even so we are very strongly of opinion that even in contemplating the sacrifice of so much hardly-acquired knowledge and so valuable an equipment as the airships repre-

sent, the Government is guilty of wanton extravagance perpetrated in the name of economy.

### An Empire Service

There is still some hope that the airships may be rescued and put to the purpose of an Imperial air service, under the scheme submitted by Mr. Ashbolt, the Agent-General for Tasmania. A memorandum on the subject of civil air communications, with particular reference to lighter-than-air craft has been prepared by the Air Ministry for the consideration of the Dominion Premiers and will be fully discussed by them at the London conferences. The full scheme as drawn up by Mr. Ashbolt, and of which some weeks ago we gave brief particulars, seems to have all the elements of success, and as the initial sum required is only three-quarters of a million, it ought to be fairly easy for the conference to see its way to finding so comparatively small a sum of money. Even the interests of "economy," as apparently understood by the Home Government, ought not to stand in the way of the initiation of such a service as that proposed. Even if the latter should turn out to be a failure and the airship be proved to have no capabilities as a vehicle of commercial transport—and we do not think that anything of the sort would be proved—the experiment would not be expensive at the price, because it would have answered, once and for all, the question of the airship and its possibilities. We shall watch with considerable interest the discussions which turn about this question of an airship service for the Empire.



AT THE R.A.F. PAGEANT:

"Flight" Copyright

The Royal Party, who were received by Air Vice-Marshal Sir John Salmond. King George is speaking to Sir John Salmond, and by the side of the Duke of York is Captain Guest.



## THE R.A.F. AERIAL PAGEANT

It is difficult to know where to begin in recording our impressions of the Second Royal Air Force Aerial Pageant, which took place at Hendon last Saturday in aid of the Royal Air Force Memorial Fund. There is so much to tell, so many points and incidents occurred, and it was all such a wonderful day's "work" that we still feel somewhat dazed—like the youngster on his return from a first visit to the circus. The first thing we *must* say, however, is that from start to finish, before and after, we have never seen such splendid organisation. Not a thing went wrong, and the full programme was carried out exactly to time without a single mishap. The traffic arrangements were excellent, but even so, such large numbers of people made their way Hendonwards from various parts, starting from shortly after 11 a.m., that nothing short of specially constructed moving platforms instead of roads could satisfactorily cope with Saturday's "excursion."

It is safe to say that by two o'clock trains, trams, motor-buses, motor-cars, and pedestrians travelling towards Hendon were, in each particular case, moving in more-or-less continuous streams—in fact the 'buses at Golder's Green were filled up and dispatched in batches of three or more. However, thanks to the assistance of "R.33," which patrolled overhead throughout the day, no serious blockages occurred, as was the case last year.

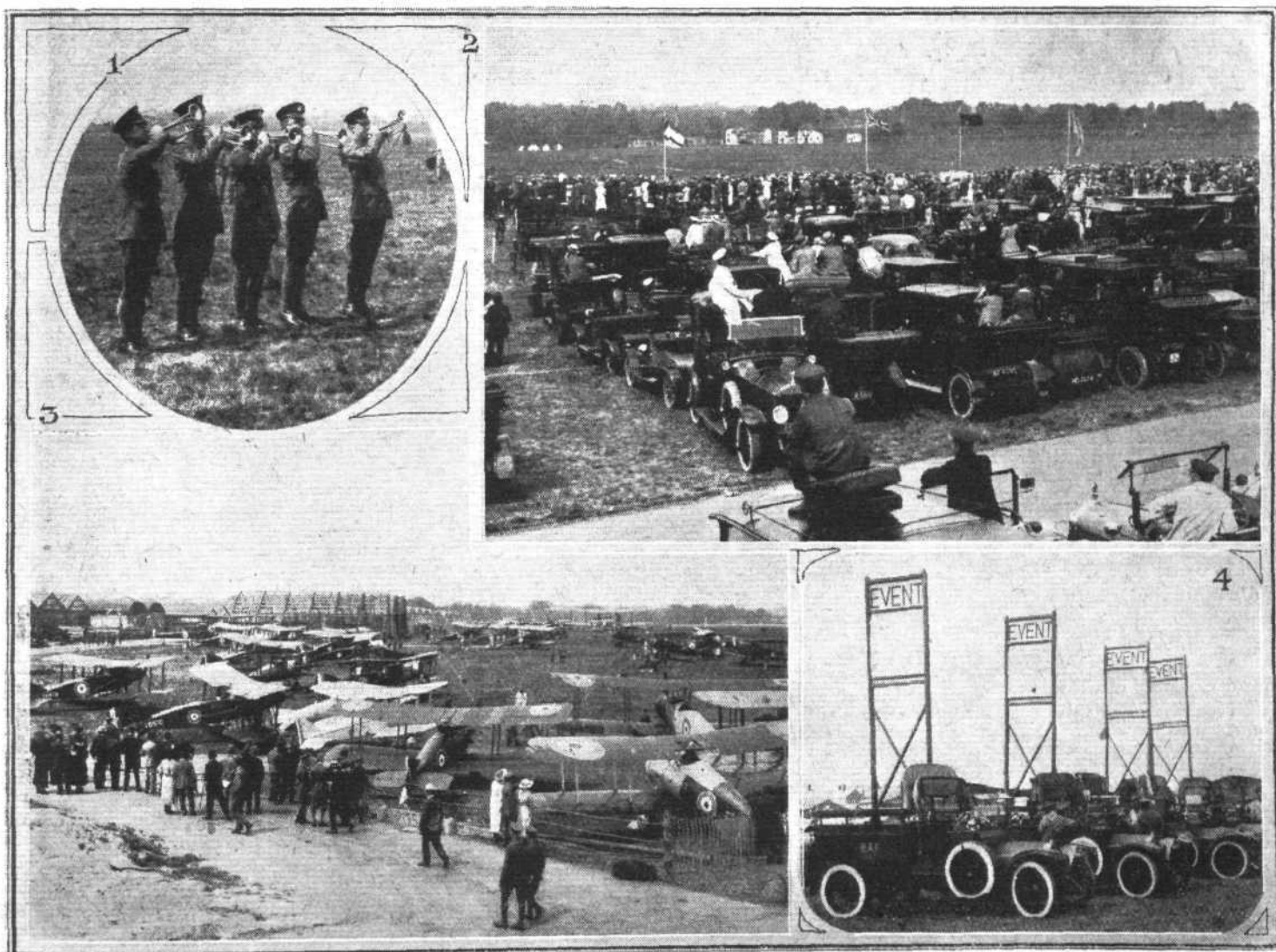
"R.33," it may be mentioned here, was ornamental as well as useful, her presence overhead throughout practically the whole of the proceedings adding considerably to our entertainment. One had an excellent opportunity of studying the behaviour of an airship during various evolutions, and on many occasions "R.33" presented a most picturesque aspect—at one time looking like burnished silver; or dark and sinis-

ter, like a shark; then ghost-like, apparently semi-transparent, fading away into the fleecy clouds.

In spite of the protests from the farmers and the Metropolitan Water Board, the rain strike still remained unsettled, and ideal weather conditions prevailed. In the morning it was bright and sunny, fine banks of white and grey clouds appearing later in the afternoon, much to the relief of our over-strained eyes. What little wind there was helped towards cooling to a certain extent, and was altogether favourable for the flying.

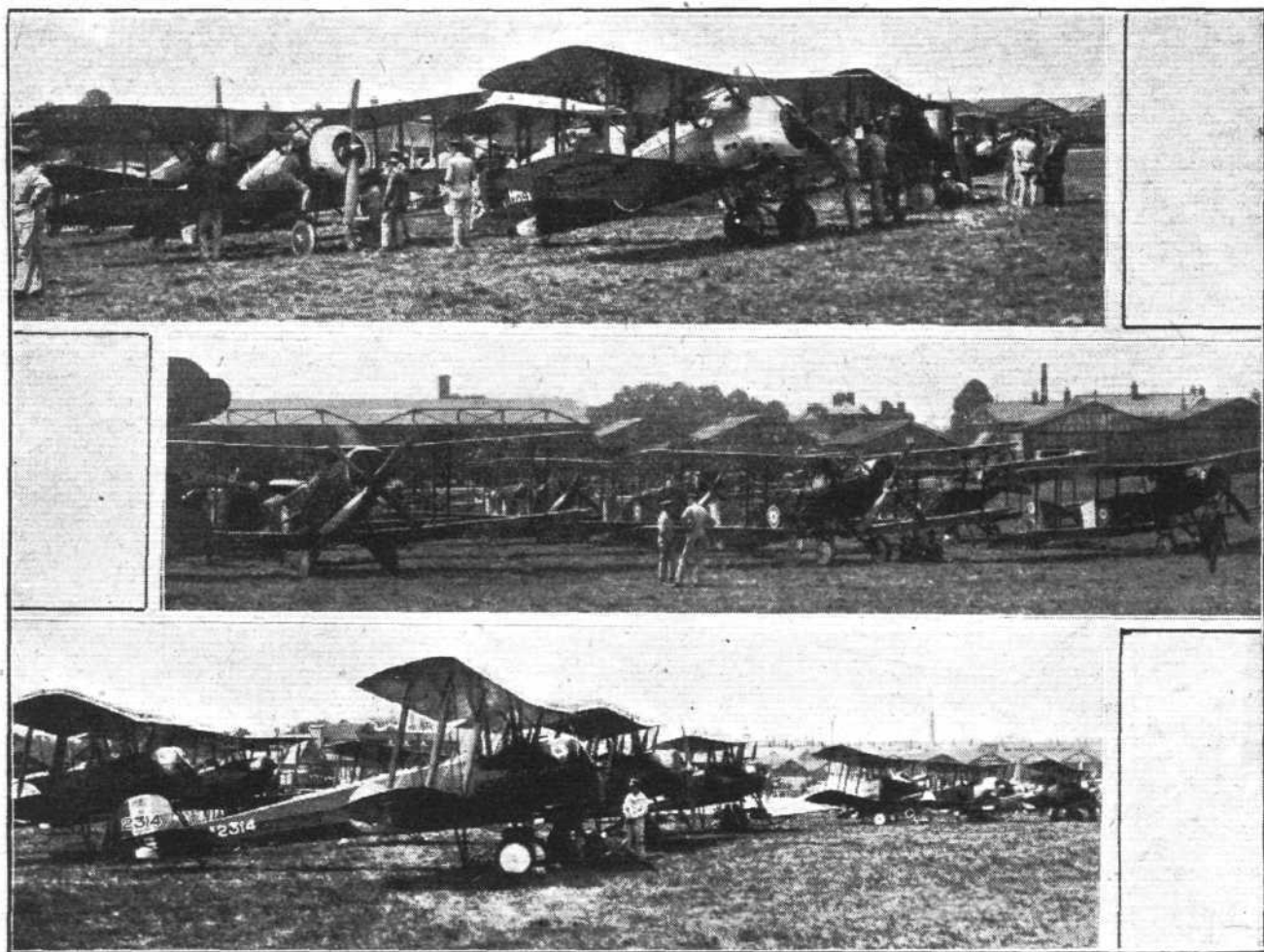
From 11.30 a.m. to 2 p.m. numerous practice flights were indulged in and several preliminary, or eliminating heats were flown for one or two of the afternoon's events, and the whole aerodrome presented an animated appearance, both in the air and on the ground. By 2 o'clock the enclosures were well filled with spectators and their motor-cars, motor-buses, and motor chais-à-bancs. At 3 p.m. to the minute, the R.A.F. trumpeters sounded the start of the first event. This was a 12-mile handicap, in which eight different types of aeroplanes took part—a most interesting race. The machines, pilots and order of starting were as follows:—

Machine.	Pilot.	H'cap. m. s.
Handley Page (0-400)	F/Lieut. C. Mc M. Laing, M.C., A.F.C.	5 3
Avro ..	F/Lieut. A. M. Blake, A.F.C.	3 47
Bristol Fighter ..	F/O. H. S. Shales ..	1 9½
Sopwith Snipe ..	F/O. J. Oliver, A.F.C. ..	1 1
D.H.9a ..	F/O. E. A. Locke-Waters ..	0 56½
S.E.5 ..	F/O. A. L. A. Perry-Keene ..	0 47
B.A.T... ..	F/O. G. Bulman, M.C., A.F.C. ..	0 29
Nighthawk ..	F/O. E. R. C. Schofield, D.C.M. ..	Scr.



"Flight" Copyright

AT THE R.A.F. PAGEANT: Top, behind the Royal Box. Note the four flags representing the Navy (White Ensign), Army (Union Jack), the Royal Standard, and the R.A.F. Ensign. A good view of the village is seen in this picture, also some of the motor cars. Below, a corner of the aeroplane park, where many types may be distinguished. Inset, left, the R.A.F. Herald Angels who announced the start of each event. Inset, bottom, right, the event boards (on Crossleys) which toured up and down each enclosure displaying the No. of each event.



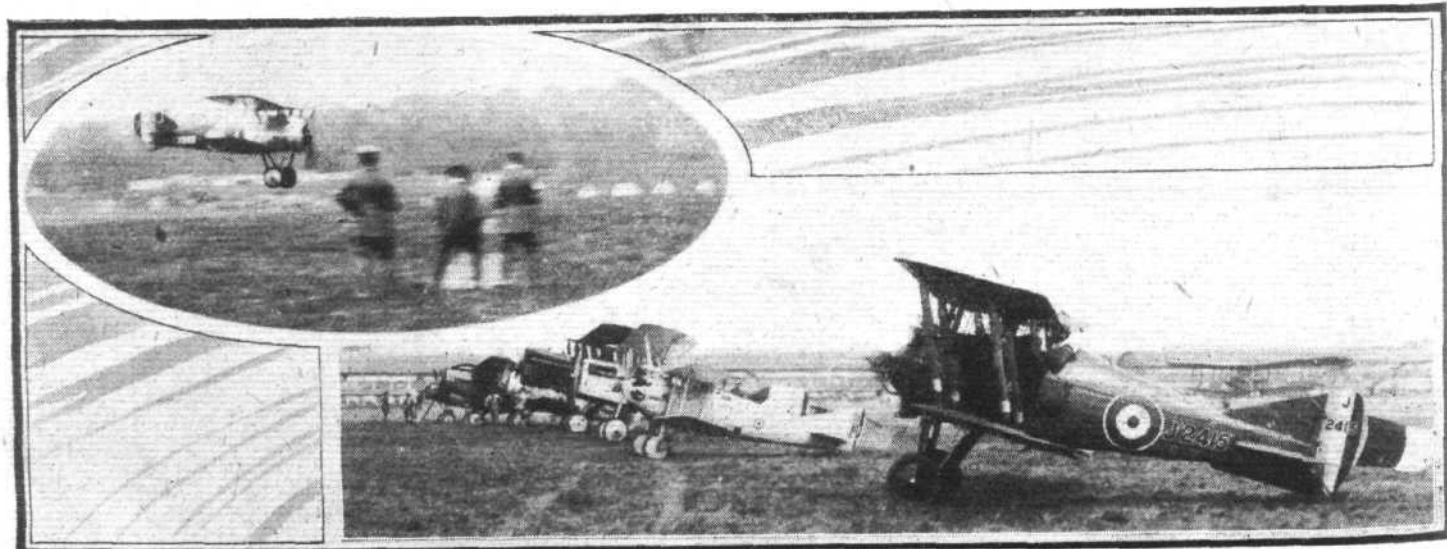
"Flight" Copyright

**AT THE R.A.F. PAGEANT : Top, a batch of Snipes ; Centre, a batch of Bristol fighters ; Below, a batch of Avros.**

The machines started off towards the north end of the aerodrome and rounded the first turning point over Mill Hill, and passing back over the aerodrome turned the second point somewhere out in the direction of the Welsh Harp. They then returned to the first point, back to the aerodrome, where they rounded the pylon in the N.W. corner and finally flew past the Royal Box, where the finishing line was located. The first to cross the line was F/O. Oliver on the Snipe, his time being 5 min. 15 secs., the second being F/O. Locke-Waters on the D.H.9a (9 min. 18 secs.), with F/O. Schofield on the Nighthawk two seconds behind. The S.E. 5 and the Avro followed close behind, and then the others, with the Handley Page last but not least. The next event was an aerial combat between F/Lieut. D. F. Stevenson, D.S.O., M.C. (Pilot), F/O. R. Stephenson, D.F.C. (Gunner), on a Bristol Fighter, and F/O. C. E. Maitland, D.F.C., and F/O. J. Bradbury on

Sopwith Snipes. This combat was a great improvement on last year's, the various manoeuvres for the position of advantage—which produced some wonderful loops, rolls, Immelmans, etc.—being much more easily followed and understood. The conclusion, also, was very realistic, for suddenly one of the Snipes, apparently hit, dived and descended in a spin. In the meanwhile the other Snipe got its shot home, and the Bristol spiralled down with a stream of smoke trailing out behind.

The third event was a Standard Avro Race—what 'buses these are ! Johnny Walker will have to look to his laurels—and whilst the machines were being lined up a commotion in the vicinity of the Royal Box turned all eyes off the aerodrome. The cause was the arrival of H.M. Queen Alexandra, who was accompanied by the Princess Royal, Princess Victoria, and Princess Maud. They were received with



"Flight" Copyright

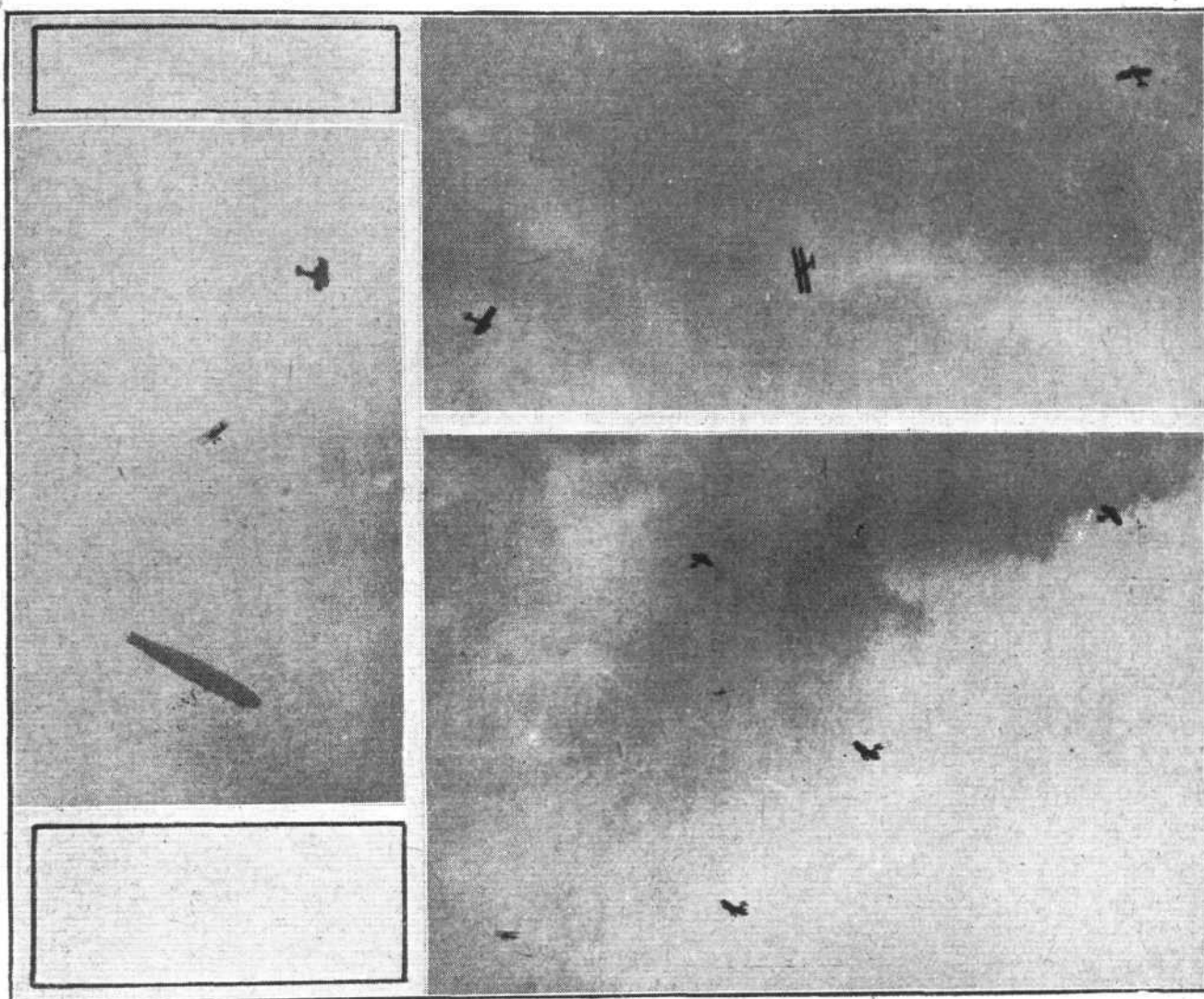
**The start of Event 1 at the Pageant, a handicap race in which eight different types of aeroplanes took part. The Handley Page (limit 'bus) has just left. The Nighthawk (scratch) in foreground. Inset, the Sopwith Snipe (F/O J. Oliver, A.F.C.) winning the race.**



much cheering, and the R.A.F. Band struck up the National Anthem. A few minutes later H.M. the King arrived, accompanied by Queen Mary, and Group Capt. H.R.H. the Duke of York, the band again playing the National Anthem. They were received by Air Vice-Marshal Sir John Salmond, Air Commandant Pitcher, Group Capt. Longmore, Group Capt. Ludlow Hewitt, and Wing-Commander Joubert de la Ferté. The enclosures, now that our attention had been drawn to them, presented a remarkably gay aspect. The fair sex—with equally fair colourings of dress—was very much in evidence, and many notabilities occupied the private "boxes." Amongst those present in the latter were, we understand, the Dominion Premiers and Air Attachés from the Embassies, H.R.H. the Infanta Alfonso Orleans, Air-Marshal Sir Hugh Trenchard, Maj.-Gen. Sir F. H. Sykes

lead on the first crossing of the aerodrome, with Biggin Hill close behind. On the next, Shotwick got in front of Halton, and on the third Kenley got in between. Kenley obtained the lead on the last lap, and maintained it to the finish, Shotwick coming in second and Halton third. Kenley's time for the course was 8 min. 4 secs., and Kenley's A.M.'s were pleased.

Then came a magnificent display of exhibition flying on a blue B.A.T. by F/O. P. S. W. Bulman, M.C., A.F.C., who executed all the well-known "stunts," and others besides, in truly remarkable style. His vertical spins upwards were extraordinary. No sooner was this display over than five Snipes (piloted by S/Ldr. C. Draper, D.S.C., F/Lieut. T. E. N. Gerrard, D.S.C., F/Lieut. A. Coningham, D.S.O., M.C., D.F.C., F/O. R. C. B. Brading, D.F.C., and



"Flight" Copyright

**A TRIO OF EVENTS AT THE PAGEANT :** On left, duel between a Siddeley-Nighthawk and a Siddeley-Siskin—the latter is seen at the top making a sharp turn after the latter. Below is "R.33" hovering in the haze. Top right, Event 2, two Snipes attacking a Bristol Fighter, which was eventually "brought down in flames." The Snipe on the right is on its back, and the Bristol, in the centre, is diving out of the danger zone of the second Snipe. Bottom right, Event 5, formation flying by Snipes. The first two machines (at top) have executed a half-loop and are continuing their flight upside down—the other three are about to follow suit.

and Lady Sykes, Lord Vernon, Lady Leighton, Air-Commodore Brooke-Popham, Lord Hugh Cecil, Lord Northcliffe, Lord Rothermere, Maj.-Gen. Seeley, Maj.-Gen. Sir Sefton Branker, Rear-Admiral Sueter, Rear-Admiral Lambert, etc.

In the meanwhile the Avro race was in progress, and never before has it been our good fortune to witness such a fine and exciting race. Fourteen Avros took part, each representing 14 air stations. They all started off together, only one being a few seconds late in getting away, and made a most impressive sight as they rose like a flock of startled crows. The course flown was the same as that of the previous race, and they were in full view at each of the turning points, the rounding of which was done in fine style. Each time they passed over the aerodrome great excitement prevailed in placing the different stations, which were distinguished by coloured streamers on the rudders. Halton obtained the

F/O. W. E. G. Mann, D.F.C., all of the Central Flying School) took off in V-formation and gave us 15 minutes of some really pretty figure flying. On one occasion they flew along in single file, and as they passed the Royal Box, porpoised gracefully, then turning back, still in single file, the leader suddenly looped on his back, and continued thus for some considerable distance. One after the other the rest followed suit, and we had the remarkable sight of a line of five machines flying upside down! At the end of their display they once again got into V-formation and thus landed.

After this came another aerial combat, this time between F/Lieut. W. H. Longton, D.F.C., A.F.C., on a Siddeley-Nighthawk, and F/Lieut. A. Coningham, D.S.O., M.C., D.F.C., on a Siddeley-Siskin, and a splendid aerial duel it was—several times it looked as if one was going to ram the other. They



"Flight" Copyright

**The line-up for Event 3, R.A.F. Pageant: the Standard Avro Race, which was won by Kenley Station.**

were both very evenly matched in every way, and whoever won, 'twas a famous victory."

The Siddeley-Siskin is certainly "some" 'bus, and demonstrates that Siddeleys can build *real* aeroplanes as well as engines. Its sprightliness in manœuvring was extraordinary; and, moreover, she is pretty to watch in the air.

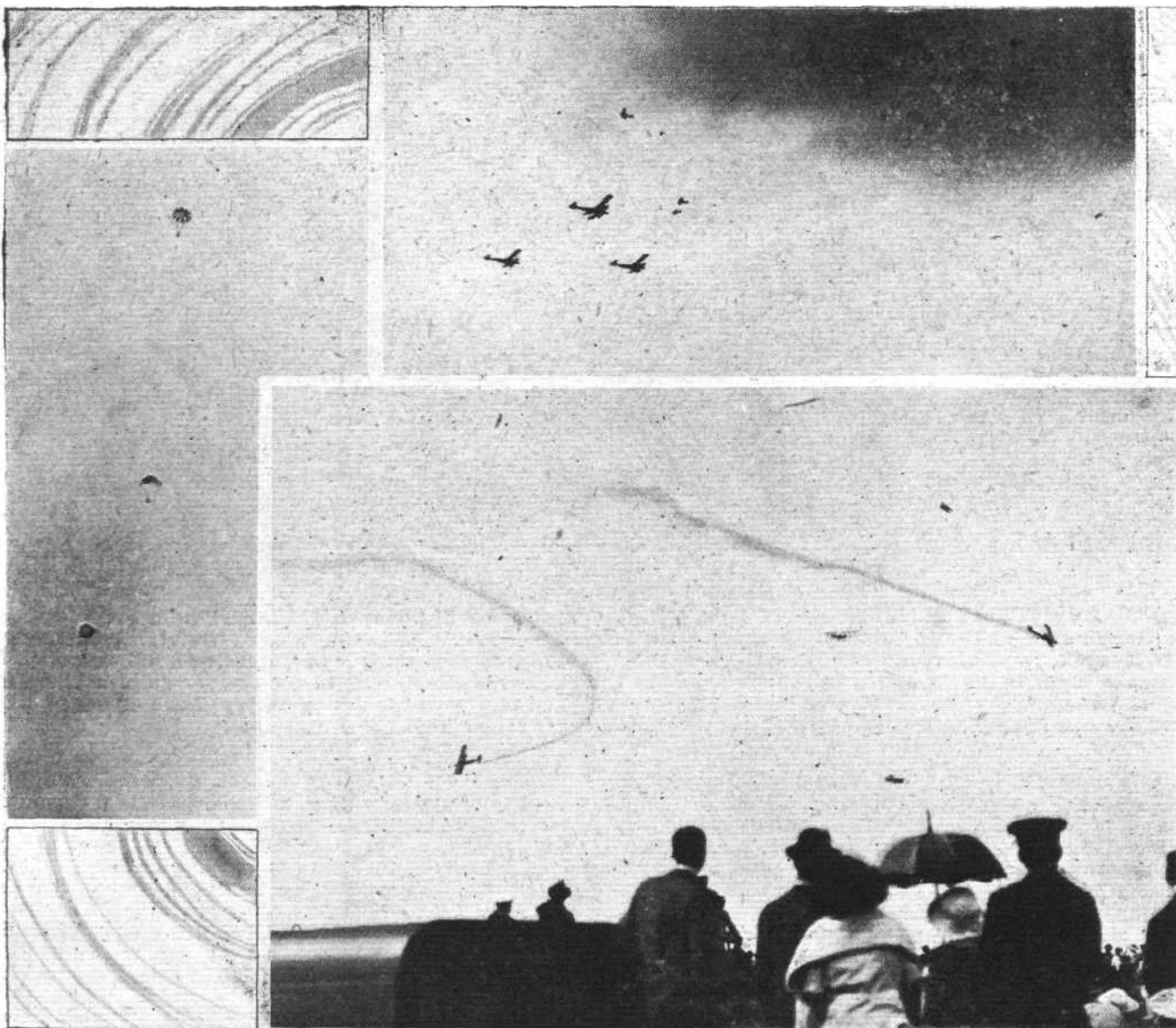
We then had another display of formation flying, this time by nine Bristol Fighters (S/L. E. H. Johnson, O.B.E., F/Lieut. J. M. Robb, D.F.C., F/Lieut. C. S. Wynne-Eyton, D.S.O., F/Lieut. J. R. Howett, F/Lieut. R. W. Chappell, M.C., F/O. E. S. Robbins, F/O. F. L. Luxmore, F/O. M. L. Tra-

"Flight" Copyright

**Event 11, the Relay Race: The Kenley Snipe flying home the winner.**

pagna-Leroy, A.F.C., and F/O. T. C. Praill, D.F.C., of No. 24 Squadron, Kenley). They also took off in formation, and it is hardly possible to describe in words the various evolutions they performed. One was particularly striking: when flying in a formation of three groups of three, the leader fired his "rocket" and they scattered in all directions. The leader then gave a second signal and they all closed in again. They "formed threes," flew abreast, flew in ascending and descending spirals, and descending increasing spirals, etc., etc., after which they formed into one large V and landed.

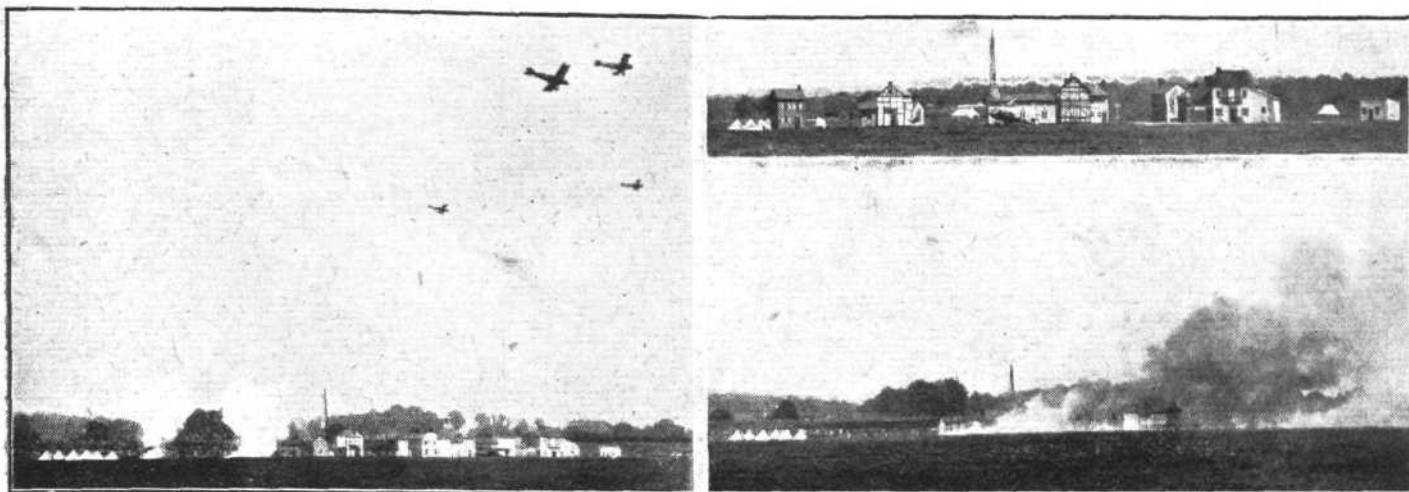
F/Lieut. W. H. Longton then gave an exhibition of upside-



"Flight" Copyright

**EVENT 9 AT THE PAGEANT: The attack on three Handley Page bombers by five Snipes. In the first picture the latter are seen swooping down and firing their guns, and below two of the Handley Pages are sent down "in flames." To the left Mr. Newel "escapes" from the third Handley Page, and to make certain, uses three parachutes!**





"Flight" Copyright

**BOMBING THE "VILLAGE" AT THE PAGEANT: Event 14.** *Top right*, the village of Scrappa Plain, before the attack. The building on the right is the Inn noted for its Lager. The church steeple was originally an aeroplane fuselage. The Albatross biplane in the foreground "went up" on the first bombs being dropped. *On left*, the Bristol bombers drop their first "pills" on the deserted village, the "inhabitants" having just made good their escape. *Below, right*, the village well alight. The Albatross (on extreme right) has just "come down."

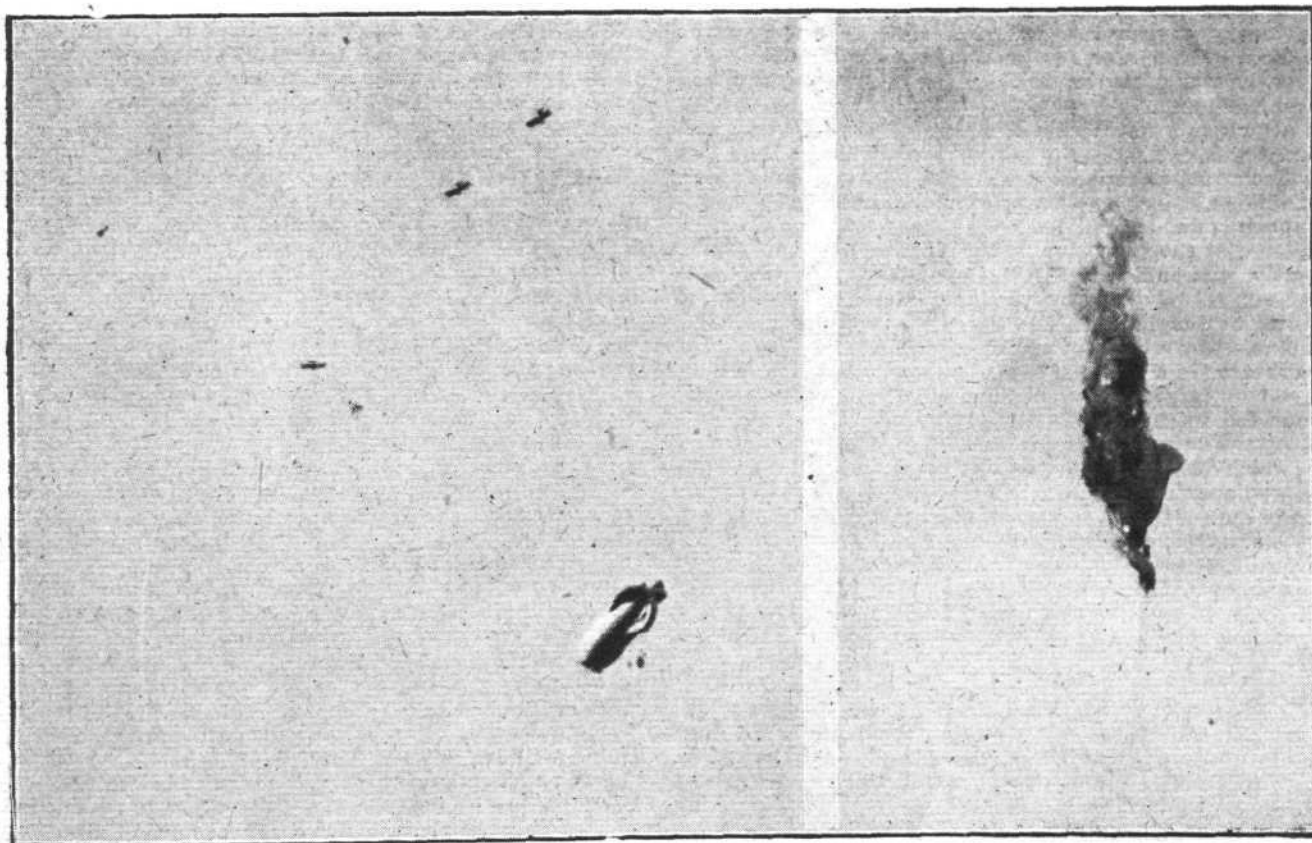
down flying, slow rolling, etc., similar to the display so much appreciated, last year. His handling of the Sopwith Camel is, without doubt, hard to beat, and every evolution as graceful as it is amazing.

One of the star turns was the next item on the programme—an attack on a formation of three Handley Page (0-400) bombers by five Sopwith Snipes. The H.P.'s got off in formation, and manoeuvring to get their height outside, approached the aerodrome looking very grand and terrible. Meanwhile the Snipes had also got away, and came in from the opposite side of the aerodrome to meet them. They dived towards the bombers with a burst of machine-gun fire, and then zoomed up over and past them. Simultaneously volumes of smoke issued from one of the H.P.'s, and it swerved out of the formation and hurriedly descended. The Snipes again attacked, and the second bomber "took fire," and descended in a realistic spiral—and then there was one. This one escaped from the Snipes, but returned to the aerodrome when

the coast was clear—the Snipes having returned home—and Mr. Newel, apparently with important dispatches, stepped overboard, only to be momentarily checked by a red-and-white Guardian Angel. Newel, however, was not to be done, so he released himself and again fell earthwards until another G.-A. (a blue one) pulled him up. Once again he freed himself, and for the third time a (white) G.-A. checked his downward journey, which was, nevertheless, gracefully accomplished to the enthusiastic applause of the onlookers.

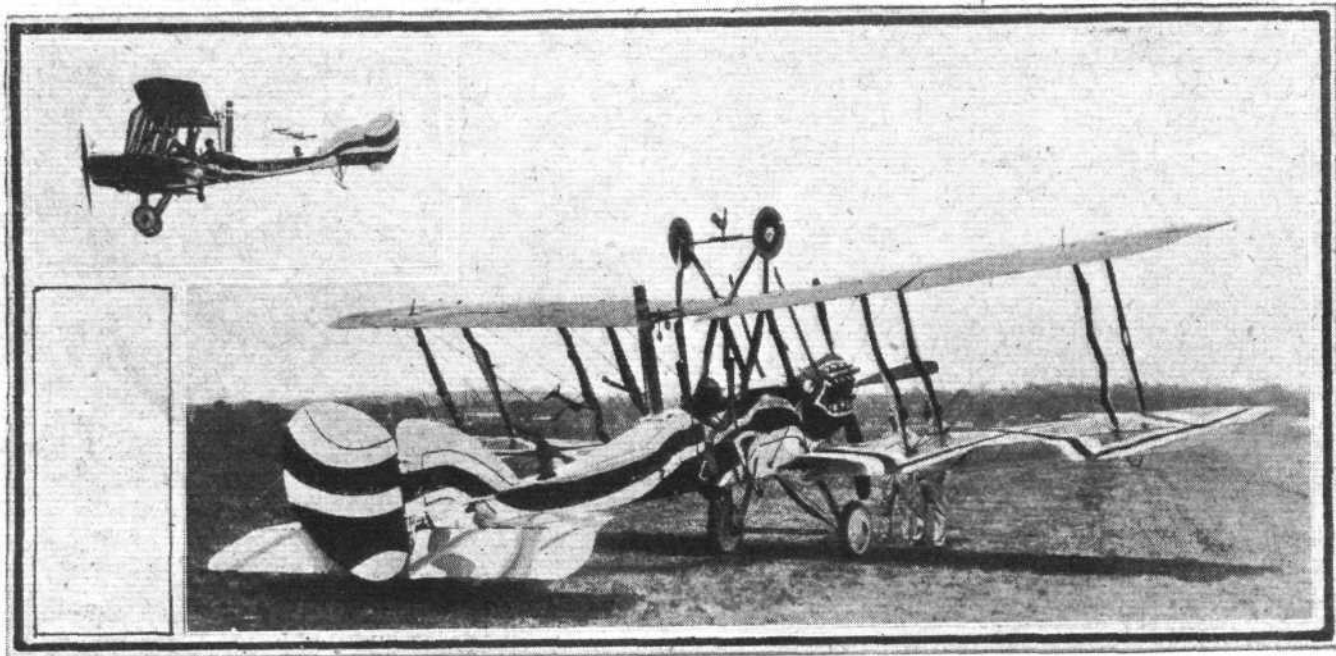
After this we had a flying contrast in aeroplane design, when a S.E.5 went up and, actually as well as literally, made rings round a B.E.2xyz. The latter was fitted with a funnel (complete with smoke), a very forward backward stagger, and an auxiliary landing chassis-cum-weather-vane on the top plane.

The next event was a relay race for the Duke of York's Cup, between one team, consisting of an Avro, a Bristol Fighter, and a Snipe, from the various stations. The Avros



"Flight" Copyright

**AT THE PAGEANT: Event 13**—which was an unlucky number for the kite balloon. The Snipe on the left is leaving the formation to attack the balloon, and on the right the kite balloon is seen falling to the ground in flames.



"Flight" Copyright

**AT THE R.A.F. PAGEANT: The B.E.2xyz, the last word (thank goodness) in early aeroplane design, which patrolled the skies and kept the flies off the flyers. Inset above, the B.E.2xyz in full flight.**

of each team started off first, and on finishing the course the pilot handed over a message to the pilot of the Bristol of his team, who got away as quickly as he could. The Bristol pilot on his return also handed over his message to his Snipe pilot, who completed the final stage of the race. Kenley once again obtained first place by the combined efforts of F/Lieut. R. W. Chappell, M.C. (Avro), F/Lieut. J. M. Robb, D.F.C. (Bristol Fighter), and F/O. F. L. Luxmore (Snipe). Neatheravon was second and Uxbridge third.

F/Lieut. J. Noakes, A.F.C., M.M., then came along on a Bolshevik Avro (painted the reddest red we have ever seen) and put up some real Bolshevik flying. What he did on that Avro put Einstein's theory of Relativity right into the shade. After taking off at an angle of 45 degs. in the horizontal plane, he proceeded to disagree with all the findings of such men of science as Lanchester, Newton, Euclid, Philips, Chanute, etc., and showed how pleased he was with himself at doing so, by vigorously wagging his tail each time he flew past the Royal Box. Even now, we do not believe he did it all. However, he was presented to the King afterwards, and well deserved the honour.

The attack and destruction of a kite balloon followed, and this event was carried out much more realistically than last year. Escorted by a formation of Snipes, F/Lieut. Coningham, also on a Snipe, approached the kite balloon, and when immediately above it suddenly dived out of the formation down at the balloon, at the same time firing his machine-gun. That, apparently, was sufficient for Maj. Sandbags, the observer, for he immediately left by the first parachute for home. Returning to the balloon, the Snipe made another swoop, accompanied by a burst of machine-gun fire, and then a tiny flame appeared in the side of the balloon, which was very soon enveloped by large tongues of flame and volumes of smoke, and thus fell to earth.

Full attention was then drawn to the village of Scrappa Plain (which had been erected out on the aerodrome from scrap aeroplane material), where a certain amount of liveliness was observed. It was supposed that enemy headquarters, under Gen. Blitzenscooter, were quartered in this village—we certainly observed quite a number of persons in grey-green uniforms foregathered round the Public Libeery. Several gaily dressed fräuleins were to be seen promenading about, whilst mechanics pottered about an Albatros biplane.

Suddenly aeroplanes were seen approaching overhead, and immediately the whole village was in a state of uproar. The Military hurriedly finished up their lager and opened a half-hearted fire on the approaching machines, whilst Gen. Blitzenscooter made a dash for the Albatros, and the inhabitants took to flight. (Of course they would, very good paper FLIGHT.—ED.)

Soon the Bristol Fighters swooped down, firing bursts from their machine-guns, scattering the remainder of the occupants of the village, and as they passed over the village "released" their bombs. Blitzenscooter on the Albatros started on an altitude flight about the same time as one of the bombs. We think the rest of the story is told by some of the accompanying illustrations; suffice it to say the Bristols made a second attack on the by then merrily burning village and pretty-well wiped it out. Seen from our point of vantage the whole effect was terribly realistic.

Whilst the village was burning itself out, a Handley Page flew over and dropped smoke bombs in front of the former, and presently a thick smoke screen intervened, blotting out all trace of anything that lay behind—the advance of infantry upon the village could thus be covered.

The finale was a regular "Brock's Benefit," magnificent indeed to see. The Handley Page dropped other smoke bombs, of another type, which burst in mid-air, very much like star-shells, releasing beautiful formations of cumulus-like clouds of smoke, which gradually melted into a diffused mist totally obscuring any machine in the vicinity. It was, in fact, the aerial "Curtain."

Our journey home was, thanks to improved traffic control, slow but sure, and waiting in the various crawling queues gave us plenty of opportunity for reflecting on the day's wonderful proceedings. It was undoubtedly the aeroplane's red-letter day, for even to the end it got in the last word, so to speak. As we passed over Hammersmith Bridge, having successfully crossed London from Golder's Green, a D.H.9 flew overhead, and presently those who watched saw fired from the machine, first a white light, then a red! Poor old Georges! If only he had won, "Aviation" would have been proud indeed.

And a final word: £9,000 is said to be the amount netted—not necessarily net—by the Pageant for the R.A.F. Memorial Fund!

#### The Visit of the King and Queen of the Belgians

AMONGST those present to receive the King and Queen of Belgium on landing at Dover was Air Vice-Marshal A. V. Vyvyan (Air Officer Commanding Coastal Area), and amongst the guests at the State banquet given by T.M. the King and Queen at Buckingham Palace in honour of the King and Queen of the Belgians, were Air-Marshal Sir Hugh Trenchard (Chief of the Air Staff) and Lady Trenchard, Air-Commodore and Mrs. Charles Lambe, and Wing-Com-

mander Louis Greig (Comptroller to H.R.H. the Duke of York).

#### Peking-Shanghai by Air

A PRELIMINARY trial for the service between Peking and Shanghai has been made on a Vickers-Vimy machine between the first part of the route as far as Tsinanfu. Starting from Peking after breakfast the return journey was completed by tea-time. Subject to a six months' trial period proving successful, the full route will be then made permanent.



## THE BRISTOL COMMERCIAL TEN-SEATER BIPLANE

A NEW commercial type aeroplane has recently been completed by the Bristol Aeroplane Co., and we give below some brief particulars of this machine, together with photographs and general arrangement drawings.

This new Bristol is a large ten-seater single-engined tractor biplane, having an enclosed cabin for eight passengers and an open cockpit for pilot and mechanic.

The 450-h.p. Napier "Lion" engine, with which this machine is fitted, is on a readily detachable mounting which also carries the nose radiator and oil tank. Complete access to the engine can be obtained by releasing six self-locking fasteners, no part of the cowl being removed from the machine. Electric starting is fitted, as well as hand turning gear operated from the ground.

The fuselage is of deep rectangular section, with curved

each seat. These fold against the side of the saloon and are readily accessible, the waste pipe discharging through the floor.

In the roof of the machine a special emergency exit is provided, measuring 2 ft. 2½ ins. by 2 ft. 2 ins. This is operated by a quick release gear should occasion arise.

When it is desired to use the machine solely for the transport of cargo the space available is: length, 10 ft. 6 ins.; height at centre, 5 ft. 9 ins.; width, 4 ft.

The pilot's and mechanic's cockpit is located high up in the fuselage at the leading edge of the top plane. An exceptionally fine range of vision is thus provided.

Below the pilot's cockpit is a compartment 4 ft. 6 ins. long by 4 ft. wide by 2 ft. 6 ins. high, accessible through a trap door in the underside of the fuselage. This is intended



THE BRISTOL COMMERCIAL TEN-SEATER BIPLANE : Three-quarter front view.

top deck, tapering to a shallow vertical knife-edge at the rear; the fuselage completely fills the gap between the planes. The saloon, or passengers' cabin, extends from the region of the front main wing spars well aft of the planes. Access to the cabin is by way of a door at the rear of the former, on the port side. Six of the passengers are located in separate seats, three a side, facing forward, and the other two passengers sit at the front end of the cabin facing aft. The seats are collapsible, and when folded project only five inches from the cabin sides, leaving a maximum of floor space should it be desired to carry cargo in lieu of passengers.

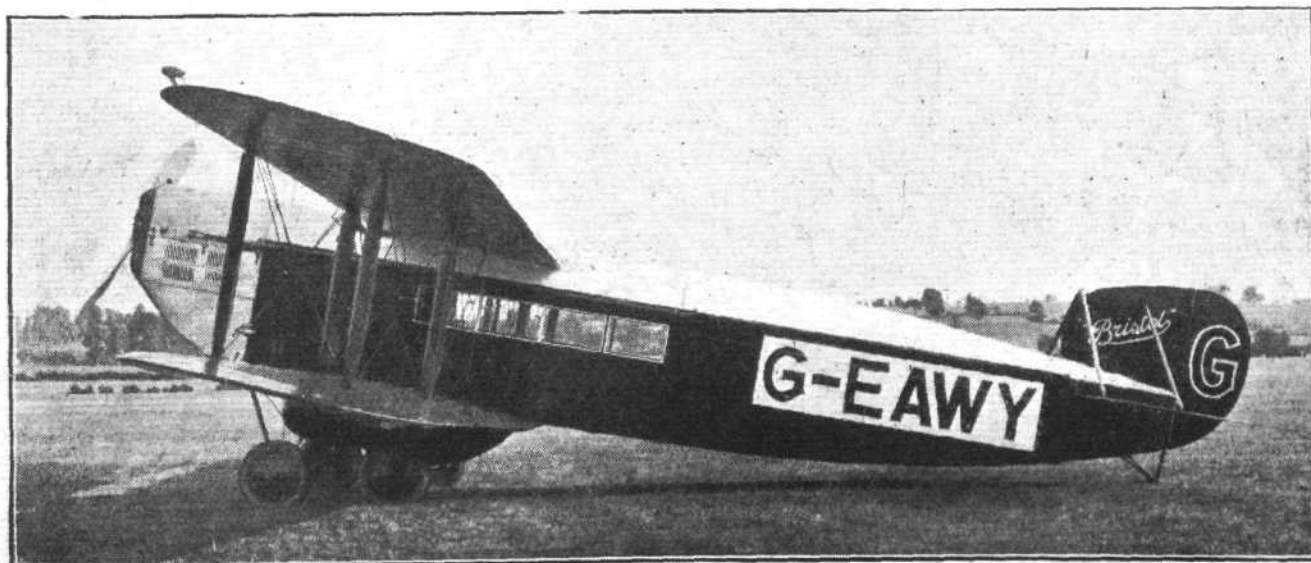
Windows, which can be opened, are fitted the full length of both sides of the cabin, and heating is provided by means of hot air muffs round the exhaust pipes. For the convenience of passengers liable to air-sickness a small concealed self-emptying basin has been provided in close proximity to

for the conveyance of passengers' luggage or for other suitable cargo.

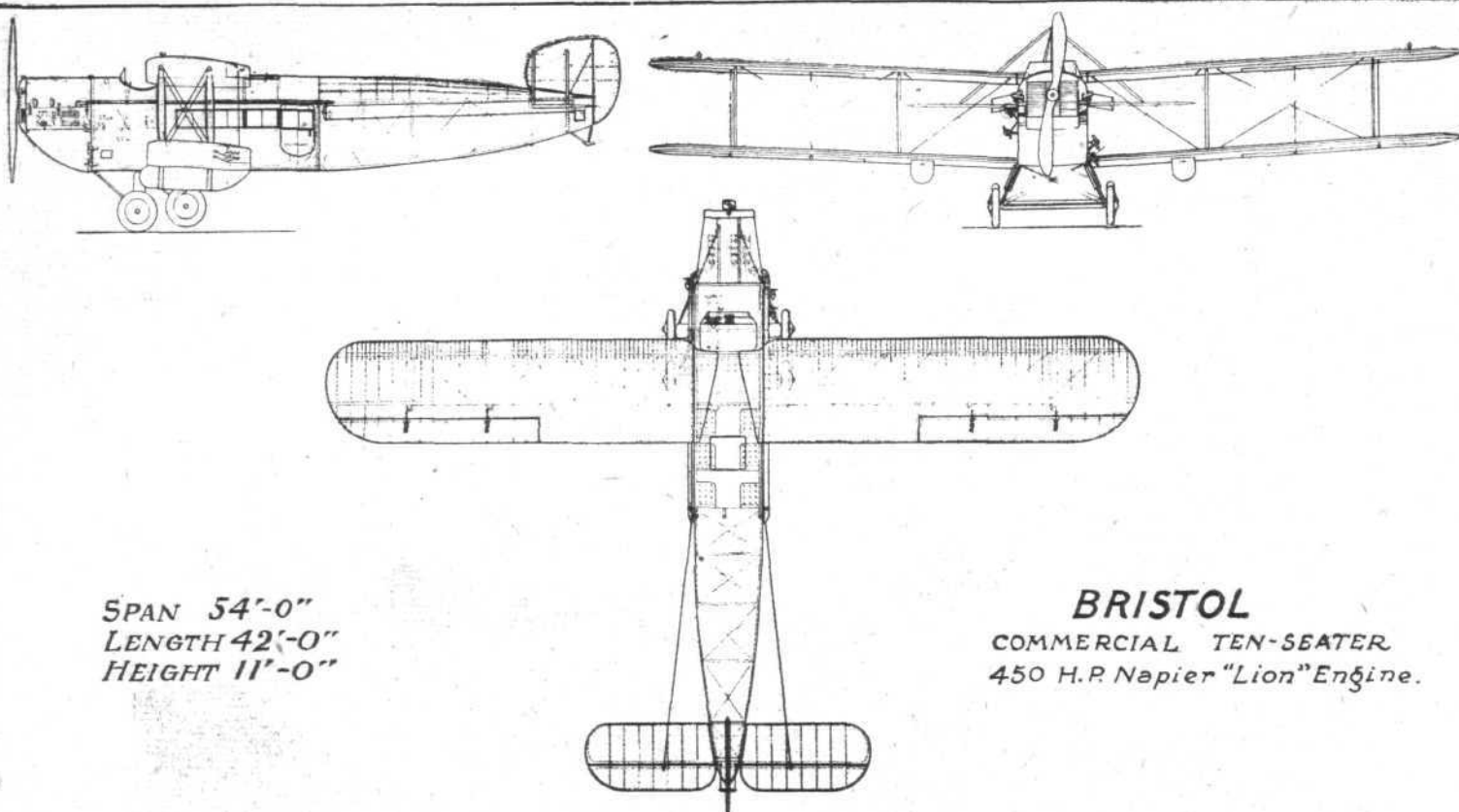
Between the engine compartment and the pilot's cockpit is a steel fireproof bulkhead, and all control connections pass through glands. No petrol is carried in the body of the machine aft of this bulkhead.

In the pilot's cockpit a complete wireless telephone and telegraph installation is installed, and has been fitted so as to be completely accessible to the mechanic. In order to allow of communication between the pilot and the passengers a small trap door has been provided to allow of messages being passed when required.

Single control of the wheel type is fitted, all cable pulleys being five inches in diameter. The tail incidence can be varied by a lever and quadrant adjacent to the pilot, to trim the machine under all conditions of speed and load distribution. All control surfaces are unbalanced.



THE BRISTOL COMMERCIAL TEN-SEATER BIPLANE : Side view.



SPAN 54'-0"  
LENGTH 42'-0"  
HEIGHT 11'-0"

**BRISTOL**  
COMMERCIAL TEN-SEATER  
450 H.P. Napier "Lion" Engine.

THE BRISTOL COMMERCIAL TEN-SEATER BIPLANE : General arrangement drawings.

The main planes are of equal span and chord, and are without stagger or sweepback, but are set at a pronounced dihedral angle. The lower planes are attached direct to the sides of the fuselage, and the top ones to small wing-roots in the roof of the cabin. There are two pairs of interplane struts each side, and the landing and lift bracing is by streamline wire. Ailerons are fitted to all four wings.

The chassis is of the four-wheeled Oleo-elastic type, with wheels in tandem, brakes being fitted to the rear wheels and operated by a car type brake lever in the pilot's cockpit. A gate is provided for the brake lever so that the brakes may be operated together or singly as required. Elastic rings are used for suspension and the elastic carriers have been designed for ready renewal of these rings. The Oleo plungers are fitted with a special type of tapered needle valve to control the passage of the oil through the plunger to give constant oil pressure throughout the stroke of eight inches.

The two main petrol tanks, of 50 galls. capacity each, are slung under the bottom planes at the inner interplane struts. Petrol is drawn from either of these tanks by two Vickers' centrifugal pumps coupled in series, and delivered through a Vickers' hand pump to the carburettors, any surplus passing to a 10-gall. gravity tank and overflowing back to the particular main tank in use. Smiths' capacity gauges for both main tanks are fitted on the instrument board.

The principal characteristics of this machine are as follows :—

Dimensions				
Span	..	..	..	54 ft.
Length, overall	..	..	..	42 "
Height	..	..	..	11 "

Weights		
<i>As passenger machine—</i>		
Machine empty with water	..	3,900 lbs.
Wireless installation	..	63 "
Fuel and oil for 400 miles (100 galls. petrol, 6 galls. oil)	..	798 "
Crew (two)	..	360 "
Passengers (eight)	..	1,280 "
Baggage (50 lbs. per passenger)	..	400 "
		<u>6,801 "</u>

<i>As cargo machine—</i>		
Machine empty, with water	..	3,800 lbs.
Wireless installation	..	63 "
Fuel and oil as above	..	798 "
Crew (two)	..	360 "
Cargo	..	2,079 "
		<u>7,100 "</u>

Loading		
<i>As passenger machine—</i>		
Weight/h.p. (Napier "Lion" at 450 h.p.)	..	15.1
Weight/sq. ft.	..	10.1
<i>As cargo machine—</i>		
Weight/h.p.	..	15.8
Weight/sq. ft.	..	10.6

Performances			
	Full load.	Half load.	
Speed at ground level	.. 122 m.p.h.	124 m.p.h.	
" 5,000 feet	.. 118 "	120.5 "	
" 10,000 "	.. 114 "	117 "	
Time to climb to 5,000 ft.	9 mins.	7 mins.	
" 10,000 "	22 "	17 "	
Ceiling	.. 13,500 ft.	15,500 ft.	

#### H.R.H. the Duke of York becomes Group-Captain

WING-COMMANDER H.R.H. THE DUKE OF YORK, K.G., G.C.V.O., has been promoted to the rank of Group Captain, Royal Air Force, with effect from June 30, 1921.

#### Honouring the Guards' Colours from Above

As in many other functions "R.33" was in evidence on Saturday last, when the King presented his Guards with new Colours. On her way to Hendon to watch over the crowds attending the R.A.F. Pageant, "R.33" in the haze hovered above Whitehall during the picturesque ceremony of the presentation. In his R.A.F. Group Captain's uniform the Duke of York was a striking figure, both the Duke and

his Equerry, Wing-Commander Greig, wearing the full-dress head-dress of the R.A.F., composed of black fur slashed with blue and embellished with a gold chin-strap and blue plume. "R.33" remained until the last, passing over the Horse Guards Parade as the Chaplain-General concluded his share in the ceremony by dedicating the Colours and setting them apart in the sight of God.

#### Gnome Engine Works Destroyed

FROM Paris it is announced that the Gnome engine works at Argenteuil were destroyed by fire on Sunday night.



# The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

## CLUB FLYING MACHINES

The Club Flying Machines have now been removed to Waddon Aerodrome, Croydon.

The following machines are available for use by Members:—

3 Avros (110 h.p. Le Rhone engine).

1 B.E.2e (90 h.p. R.A.F. engine).

The machines now being the property of the Club, the charge per flying hour has been reduced to £3.

The Club's representative at Waddon Aerodrome is Capt. A. F. Muir.

## SIXTH AERIAL DERBY AND FIRST AIR RACE OXFORD v. CAMBRIDGE

THE SIXTH AERIAL DERBY and the first Air Race between OXFORD AND CAMBRIDGE UNIVERSITIES will take place at the LONDON AERODROME, HENDON, N.W., on SATURDAY, JULY 16, 1921, commencing at 2.30 p.m.

Members will be admitted free on presentation of their Club Membership Cards. Extra tickets may be obtained in advance from the Club, price 5s. 9d. each. A charge of 5s. will be made for Motor-Cars.

Members of the ROYAL AERO CLUB have been made Honorary Members of the LONDON COUNTRY CLUB, HENDON, which adjoins the Aerodrome, for the day of the Races. Members wishing to lunch or dine there are requested to book tables beforehand (Telephone: 260 Kingsbury).

### Prizes

For the AERIAL DERBY the following Prizes will be presented by the ROYAL AERO CLUB:—

Fastest Time (Winner of the Aerial Derby), Trophy and £400.

Handicap—1st Prize, Trophy and £200.

2nd Prize, £100.

3rd Prize, £50.

OXFORD AND CAMBRIDGE UNIVERSITIES will each be represented by THREE COMPETITORS, all flying identical machines, namely, S.E.5a. These machines

are being provided by the Royal Aero Club. The six machines will be started together at 2.30 p.m. and will fly three times over a circuit of about 40 miles (120 miles in all), passing the turning point on the Aerodrome in each circuit.

Each competitor will score the number of marks represented by his order of finishing. The winning team will be the one scoring the least number of marks in the aggregate.

There will be a special enclosure for Members of the Royal Aero Club; also one for Members of Oxford and Cambridge Universities.

## THE ROYAL AERO CLUB SEAPLANE RACES AT COWES, ISLE OF WIGHT

ISLE OF WIGHT HANDICAP, AUGUST 1, 1921

Prize: Trophy of the value of £100

(Presented by Lieut.-Col. F. K. McClean)

and £250 presented by the Royal Aero Club

Course.—The Course is approximately 80 nautical miles, from a point off Cowes to Ventnor, out and back twice, passing Ryde, Sea View and Foreland.

SOLENT HANDICAP, AUGUST 2, 1921

Prize: £250 presented by the Royal Aero Club

Course.—The Course is approximately 80 nautical miles, over a circuit of 20 nautical miles, situated in the Solent, and four laps of the Circuit must be made to complete the Course.

The Circuit will include a point off Cowes, No Man's Fort, Horse Sand Fort, and Spitbank Fort.

These Races will take place during the first two days of the Cowes Yachting Week and will start on each day at the conclusion of the yacht races at about 4 p.m.

Members requiring accommodation in Cowes are requested to communicate with the Club before July 16, 1921.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W.1.

H. E. PERRIN, Secretary.

## THE LONDON-CONTINENTAL SERVICES

FLIGHTS BETWEEN JUNE 26 AND JULY 2, INCLUSIVE

Route†	No. of flights*	No. of passengers	No. of flights carrying		No. of journeys completed†	Average flying time	Fastest time made by	Type and No. (in brackets) of Machines Flying
			Mails	Goods				
Croydon-Paris ...	36	186	9	21	36	h. m. 2 33	D.H.4 G-EAWH (2h. 3m.) ..	B. (8), D.H.4 (2), D.H.18 (2), G. (2), H.P. (2), Sa. (1), Sp. (4), V. (1).
Paris-Croydon ...	42	164	16	23	37	2 58	D.H.18 G-EAWO (2h. 23m.)	B. (9), D.H.4 (2), D.H.9 (1), D.H.18 (2), G. (4), H.P. (3), Sa. (1), Sp. (4), V. (1).
Croydon-Brussels ...	9	15	4	6	9	2 29	D.H.4 O-BARI (2h. 3m.) ..	D.H.4 (2), D.H.9 (2), Sp.? (1).
Brussels-Croydon ...	10	10	5	6	10	2 59	D.H.9 G-EAVK (2h. 9m.) ..	D.H.4 (2), D.H.9 (2), Sp.? (1).
Croydon-Amsterdam ...	7	7	6	6	7	4 10	D.H.9 G-EAPL (3h. 7m.) ..	D.H.9 (1), F. (3).
Amsterdam-Croydon ...	6	9	6	6	6	3 37	Fokker H-NABJ (3h. 23m.)	F. (3).
Totals for week ...	110	391	46	68	105			

\* Not including "private" flights.

† Including certain journeys when stops were made en route.

‡ Including certain diverted journeys.

Av. = Avro. B. = Breguet. Br. = Bristol. Bt. = B.A.T. D.H.4 = De Havilland 4, D.H.9 (etc.).  
F. = Fokker. Fa. = Farman F.50. G. = Goliath Farman. H.P. = Handley Page. M. = Martinsyde. N. = Nieuport.  
P. = Potez. Sa. = Salmson. Se. = S.E. 5. Sp. = Spad. V. = Vickers Vimy. W. = Westland.

The following is a list of firms running services between London and Paris, Brussels, etc., etc.:—Co. des Grandes Expresses Aériennes; Handley Page Transport, Ltd.; Instone Air Line; Koninklijke Luchtvaart Maatschappij; Messageries Aériennes; Syndicat National pour l'Étude des Transports Aériens; Co. Transaérienne.

Note.—Paris-bound Handley Page machines depart from Cricklewood.

# THE SPAD "BERLINE" S.33 BIS

250 H.P. Salmson A-Z9 Engine

GRADUALLY on the London-Paris air line the converted war machines are giving place to machines specially designed for the class of work for which they are being used. The original service started with de H. 4's and similar types, with

until quite recently that attempts have been made to introduce more suitable types. As a representative of French 1920 commercial design, the Spad "Berline," type S.33 *bis* six-seater, is of interest in showing M. André Herbemont's

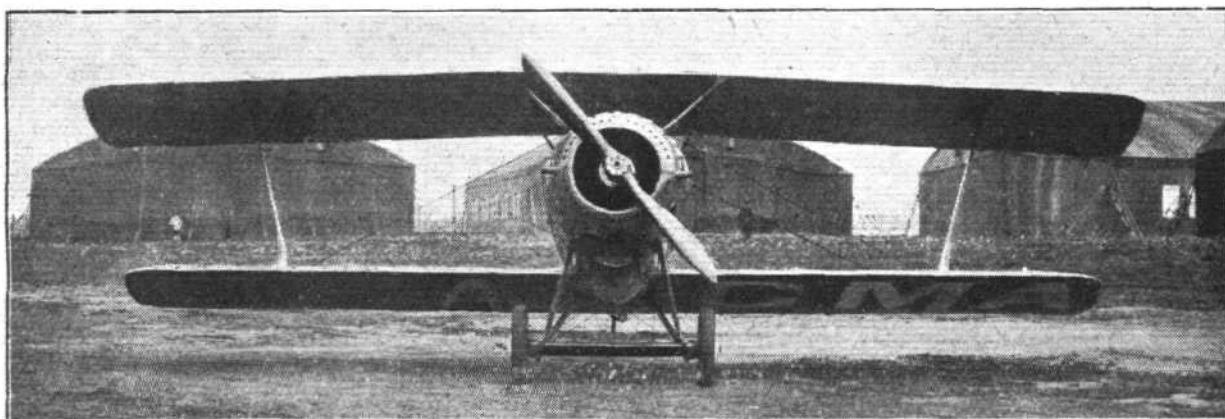


THE SPAD "BERLINE" : Three-quarter front view.

a small conservatory roof added above the heads of the passengers. It was soon found, however, that it was not a very paying proposition to run passenger services with such machines, and gradually they have been replaced by others. From Captain de Havilland's drawing-board, the latest—and most economical—machine to be used regularly is the

ideas of a commercial aeroplane. Several of these machines may now be seen at the Waddon aerodrome near Croydon.

In general lay-out, the Spad 33 *bis* follows previous machines of Herbemont's design. That is to say, the fuselage is of the *monocoque* streamline type, the wings are characterised by a backswept top plane, and a single inter-



THE SPAD "BERLINE" : Front view.

18, which has given most excellent results. Yet there is every reason to believe that the machines now coming along at Stag Lane will surpass in efficiency the 18. The French services have long been run—as regards the smaller types—with converted or "semi-commercial" types, and it is not

plane strut on each side. The rudder is of that curious fin shape (piscatorial not aerodynamic) which has for several years been typical of the Spads. The fuselage is of fairly ample proportions, much more so than in the earlier types, where the passengers were very much cramped. Seating



THE SPAD "BERLINE" : Three-quarter rear view. Note the two petrol tanks on the top plane.



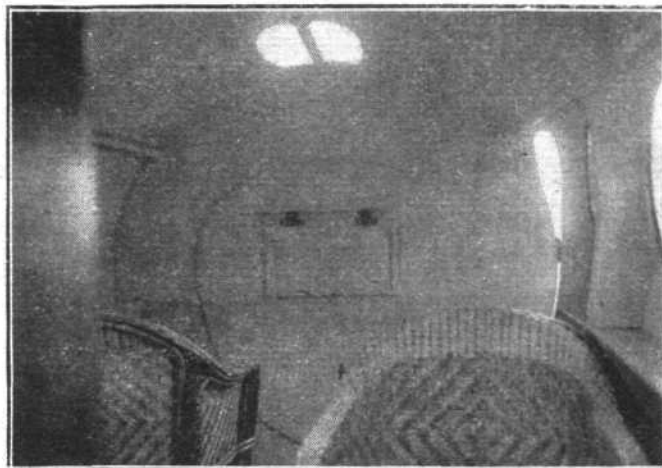
accommodation is provided for five passengers, in addition to the pilot. The arrangement of the seats is reminiscent in a general way of that of the Westlands. That is to say, the pilot sits well aft, on the port side. Next to him, and on a slightly lower level, is a seat for a passenger, who, however, sits with his head projecting through the roof, instead of being inside, as in the Westland. In front of the pilot's cockpit, which is partly partitioned off, are two wicker-work seats, one behind the other, along the port wall of the cabin. On the starboard side are two more seats, placed back to back. On the whole the cabin is fairly comfortable, although of somewhat Spartan appearance. There is no upholstery and no padding, but the cabin, with its white walls and numerous windows and port-holes, is light and well ventilated. The door is near the front of the cabin, on the starboard side, and it must be admitted that it is in an uncomfortably close proximity to the propeller. In fact it would appear that, as there are no external fastenings for keeping the door open against the slip-stream from the propeller, it has been the object of the designer to prevent the engine being run until all the passengers are on board.

In the roof of the cabin, and just clear of the leading edge of the top plane, is a hatchway covered with transparent material. This hatchway is evidently intended as an emergency exit in case, for some reason, the door is jammed; also the cockpit next to the pilot affords a means of getting out of the machine, so that, even in case of alighting on the sea, there should be a good chance for the passengers of getting out safely. The *monocoque fuselage* would probably keep the machine afloat for a considerable time.

The engine, a Salmson A-Z9 nine-cylindrical radial water-cooled, is known as one of the most reliable of French engines. It is variously known as a 250 and 275 h.p., but in reality it develops, we believe, about 300 h.p. at 1,500 r.p.m. The bore and stroke are 140 mm. and 170 mm. respectively, and the fuel and oil consumption amounts to approximately 0.56 lb./h.p./hour at full power. The weight of the engine, including magnetos and carburettors, but without water, is 660 lbs. As will be seen from the accompanying illustrations, the engine is neatly covered in, with a circular radiator in front of it. A small door in the front wall of

the cabin gives access to the carburettors and magnetos from inside the cabin, thus doing away with the necessity of removing the cowling for the purpose of inspecting these two accessories. Furthermore, there is a circular opening in the lower part of the cowl itself.

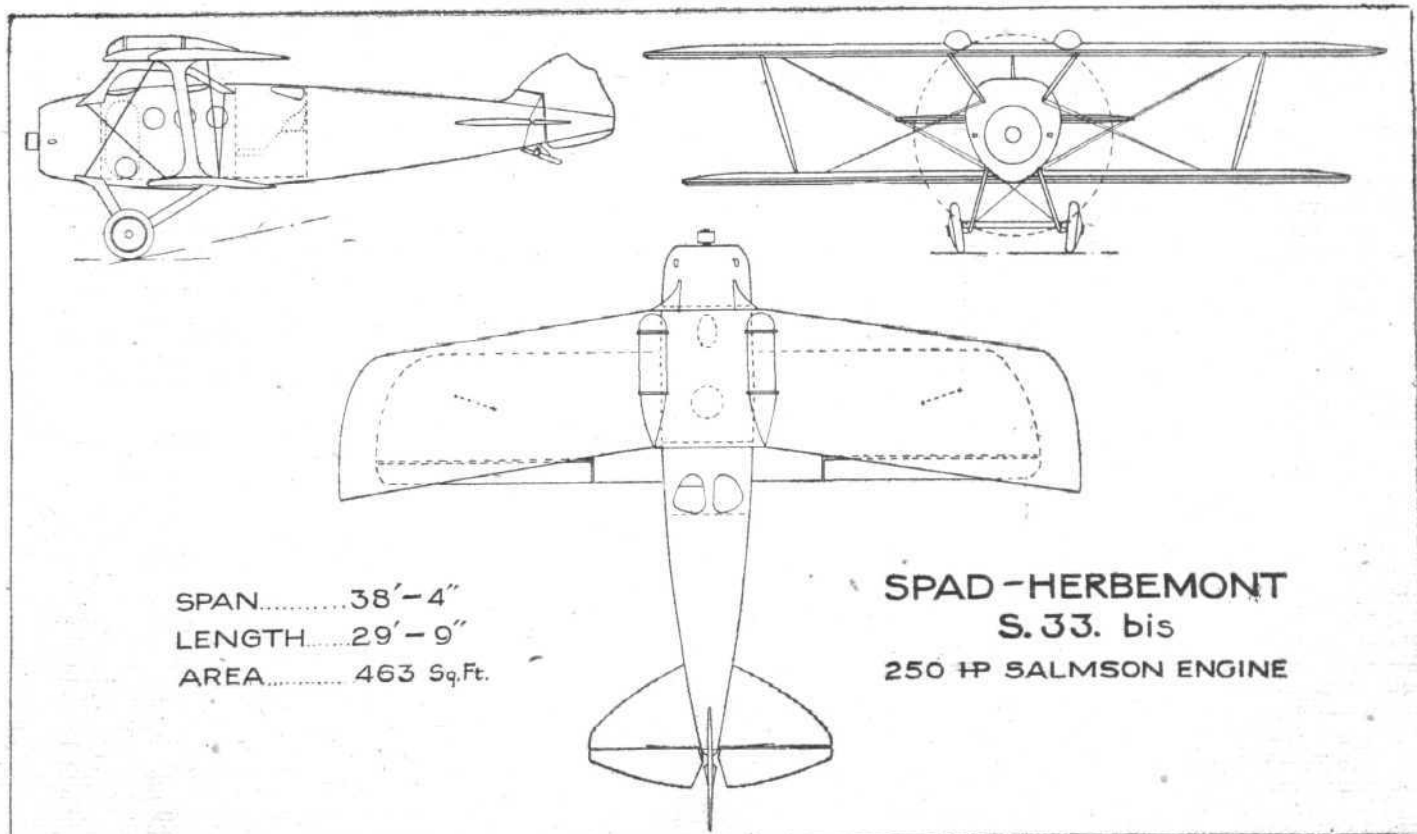
The petrol system is of the simplest possible. Two large petrol tanks are placed on top of the upper plane, and the supply to the engine is by gravity from these main tanks,



THE SPAD "BERLINE": View inside the cabin, looking forward. Note emergency exit in roof.

thus doing away with petrol pumps, and at the same time getting all the petrol away from the cabin.

As regards the performance of the Spad "Berline," the machine should be fairly economical to run, as the load carried per horse-power is fairly high. At the same time, the speed is not by any means bad, the top speed being in the neighbourhood of 110 m.p.h., with a cruising speed of about 97 m.p.h. We have no information relating to the



THE SPAD "BERLINE": General arrangement drawings.

Following are the main characteristics and performance data for the Spad 33 bis:—

Span, 38 ft. 4 ins.  
Length overall, 29 ft. 9 ins.  
Height, 10 ft. 6 ins.  
Area, 463 sq. ft.  
Weight empty, 2,200 lbs.  
Useful load, 2,200 lbs.

Weight loaded, 4,400 lbs.  
Load per sq. ft., 9.5 lbs.  
Load per h.p. (300), 14.66 lbs.  
Speed near ground, 110 m.p.h.  
Speed at 3,300 ft., 110 m.p.h.  
Speed at 6,600 ft., 109 m.p.h.  
Speed at 10,000 ft., 105 m.p.h.  
Climb: 3,300 ft. in 10 mins. 5 secs.; 6,600 ft. in 22 mins. 54 secs.; 10,000 ft. in 45 mins. 32 secs.



THE SPAD "BERLINE": Side view.

landing speed, but in view of the fact that the wing loading is approximately 9.5 lbs./sq. ft., the landing speed must be somewhat high. The machine is now in use by the *Messageries*

*Aériennes*, alternating with the older types, and probably it is the intention of the management to substitute it, as requirements demand, for these.

## ENTRIES FOR THE AERIAL DERBY

Up to the time of going to press, twenty machines have been entered for the aerial Derby, which is to take place on July 16 at the Hendon aerodrome.

There is little information which may be published at the moment. The Welsh Aviation Co., Ltd., have entered with a Sopwith Camel, 130 Clerget engine, which will be piloted by Capt. Broad. As the Camel is not exactly a projectile compared with modern machines, it may be presumed that this machine has been entered mainly for the sealed handicap. The same applies to the B.E.2c entered by Capt. Alan Curtis. With its 90 h.p. R.A.F. 1A engine this survival will probably hurtle along at somewhere around 70 m.p.h., but it should have a chance in the sealed handicap and one greatly appreciates the sporting effort of Capt. Curtis. The same may be said regarding some of the other entries. For instance, it is gratifying to find that Mr. A. S. Butler, who not long ago flew his privately-owned machine—a Bristol Tourer—to the Riviera and back, has entered and will pilot this same machine in the Derby. Mr. D. L. F. Walker has entered and will pilot a Sopwith Pup. Equally sporting efforts are the entries of Maj.-Gen. Sir Sefton Brancker, K.C.B., of an S.E.5a to be piloted by Flight-Lieut. Longton, and a similar machine entered and to be flown by Mr. F. J. Ortweiler. Col. C. E. C. Rabagliati and Maj. S. H. Long, D.S.O., have entered a Martinsyde F.4A with 300 h.p. Hispano engine. This machine will be flown by Maj. Long.

So far the only two French entrants are a Nieuport, which will be piloted by the famous French pilot Sadi Lecoq, and a "de Monge V.a." to be piloted by de Romanet. The Nieuport, which has a 300 h.p. Hispano engine, will probably be similar to that on which Sadi won the Gordon Bennett race at Etampes. She lands very fast, naturally, and one sincerely trusts that Sadi will not have to make a forced landing anywhere in a small field. Concerning this aspect of the race it is comforting to remember that there are now around London a goodly number of aerodromes, so that in case of engine trouble pilots should have a good chance of being able to carry on until within reach of one or other of these aerodromes. A certain amount of mystery surrounds the mount of Count de Romanet. This excellent sportsman has for years been piloting Spads, and one wonders at this sudden change-over to a "de Monge." Is this, one wonders, a bit of camouflage to keep people guessing as to the true identity of Bernard de Romanet's mount. The engine is the same as that of the Nieuport, i.e., a 300 Hispano, but the series number V.a rather suggests a different design.

Of the British firms appearing in the list the Avro Company makes an excellent show with no less than four machines. Two of these will be "Babies" with 35 h.p. Green engines. One of these will be piloted by the famous Bert Hinkler, whose exploits on one of the Avro "Babies" have won worldwide admiration. The other is to be piloted by Capt. Tully. After the successes of the Avro "Babies" in previous Derbys one hopes to see them doing well again in the forthcoming one. The other two Avros entered are in the nature of

"dark horses" in so far as they have not previously flown in public. The pilots for these two machines have not yet been announced, but one of the machines will have a Wolseley "Viper" engine of 180 h.p., and the other is fitted with the famous Napier "Lion" of 450-500 h.p. This machine is expected to be very fast indeed, how fast it is impossible to say at the moment, but it will, we think, give Lecoq some uneasy moments.

As in last year's Derby the Bristol Company will be represented by a "Bullet," fitted with an improved edition of the Bristol "Jupiter" engine of 400 h.p. This machine will be piloted by Mr. Uwins, the Bristol test pilot. We believe that the machine has smaller wings than had last year's, and it will probably be found to be a good deal faster than was the previous one. This entry is mainly interesting on account of the appearance of the "Jupiter" engine, of which, in its improved form, great things are expected. When the Bristol Company took over the Cosmos Engineering Co., it also took over Mr. Fedden, who designed the Cosmos engines, and we understand that Mr. Fedden has since been busy improving the engines, and that now the "Jupiter" is a really fine engine of high power and low weight. It is, of course, of the radial type, with air cooled cylinders.

In addition to the Avro "Lion" and the Bristol "Bullet," we have a promising British entrant in the machine entered by the Gloucestershire Aircraft Co. This machine, designed by Mr. H. P. Folland, will be flown by Mr. J. H. James. It is fitted with a 450 h.p. Napier "Lion" engine, and is expected to be very fast indeed. No information may be published yet, but Mr. Folland is so well known as a designer of fast machines that one has great hopes for the Mars I, as the new 'bus is called. Two more machines of Mr. Folland's design are entered; these are both British Nieuports, 300 "Dragonfly." One of them is a Nieuhawk, practically identical with the "Nighthawk," and the other is a "Goshawk," similar to that which was to have taken part in the Gordon Bennett race last year, but which, in spite of a very plucky cross-country flight by J. H. James, arrived at Etampes too late to be allowed to enter in the race.

A machine whose appearance will be watched with interest is the "Alula" monoplane, 300 Hispano. This machine is, we believe, the Martinsyde "Semiquaver" fuselage fitted with a wing of the "Alula" type, as designed by Mr. Holle, of the Commercial Aeroplane Wing Syndicate, whose design for a "Pelican" 4-ton air lorry will be remembered. This machine is to be flown by Frank Courtney, who is always game to fly anything on wings or (almost) without, and who won the race last year on the Martinsyde "Semiquaver." He will thus be sitting in the same fuselage this year, although we hope his exit from it will be less spectacular at the end of the race.

The Oxford and Cambridge teams started practising on Monday last at Waddon, when Maj.-Gen. Sir Sefton Brancker, Lieut.-Col. Maclean and Com. Perrin were present to receive them.





## LONDON TERMINAL AERODROME

Monday evening, July 4

THE mooring-mast will be finished this week-end, and airship "R.33" should be moored there on Friday next. On Tuesday last the iron foundation for the revolving head was hauled into place, and yesterday the revolving head and coupling for the nose of the airship was being fixed in position.

Work had been delayed for some time owing to a shortage of riveters. By Saturday, however, they had arrived, and the mast appeared alive with them. Several airship experts have appeared from Pulham. They tested the water pumps on Saturday, and raised steam in "George Stevenson."

To-day the petrol pumps are to be tested. Three 200-gallon portable petrol tanks have been provided to ensure the fuel supply for the airships.

Major Scott, of Atlantic flight fame, visited the aerodrome on Saturday to inspect progress.

The inside staircase does not run completely to the top of the mast. About 110 ft. from the base it is carried outside, and the remainder of the climb is accomplished on flights of steps hanging over space. They are, however, adequately railed in.

### Shilling-a-mile "Air Taxis"

MR. ST. BARBE, of the De Havilland Aircraft Co., Stag Lane, tells me that he finds the majority of those who hire special machines prefer that they should be open, rather than closed-in cabins. His Company, working on these lines, are converting D.H.9's into three-seater open machines with most comfortable accommodation.

They are now prepared to take three passengers for special flights anywhere, in one of these machines, at a charge as low as 1s. per mile per passenger.

Chickens and dogs are becoming quite a feature of the goods traffic. A consignment of chickens for Brussels arrived by train from Skipton in Yorkshire the other day, while the K.L.M. get regular consignments between Orpington and Amsterdam.

Handley Page Transport are again dispatching their machines fully-loaded from Croydon. The wireless gear and all superfluous "gadgets" have been removed, and on Saturday two 0-400's, with 10 passengers in each, took off and rose before getting half-way across the aerodrome.

There have been rumours throughout the week of the expected arrival at Croydon of an Italian five-seater commercial machine which has been acquired by S.N.E.T.A., but up to the present it has not put in an appearance.

### Flights to see the Airship

THE "R.33" was over the aerodrome on Thursday, moving slowly, and Capt. Muir, who was just about to take up joy-riders, flew over to the airship and circled round it, affording his passengers a close-up view of it from the air.

Mr. Milnes, who was one of the Aircraft Transport and Travel pilots, visited the aerodrome on Tuesday. He told me that he was going to Bristol on the following day to arrange to fly a Bristol "tourer" to Madrid.

The Bristol people appear to be selling quite a number of these machines. Mr. Uwins was over with one during the week, which I understand had been purchased as a private "air-car."

### Advertising the Aerodrome

THE South Metropolitan Tramway Co. are now popularising Croydon. They have posters on all their cars and notice-boards drawing attention to the flying at the aerodrome, and stating that admission is free.

As these trams cover districts as far apart as Sutton, Tooting, Penge and the Crystal Palace, this should not only bring them extra passengers, but augment also the crowds in the public enclosures here and, incidentally, add to the number of aeroplane joy-riders.

Capt. Greig, of the Messageries Aériennes, flew over to Ostend on Friday, and will go on from there to Paris. It is expected that some new development, as regards a service to Ostend, will shortly be announced, as Capt. Greig is also London manager for the S.N.E.T.A.

In addition to the 10 a.m. and 4 p.m. services to Paris, run by the Messageries Aériennes, they endeavour still further to accommodate their passengers as regards times of departure. As they have three services from Paris, as against the two from London, there is always an extra machine at this end, and Capt. Greig sends this away at any time convenient to passengers.

### Hourly Air Service

THIS frequency in flying is a good way to encourage air travel, and I understand that the Messageries Aériennes hope ultimately to start off a machine every hour from

London to Paris, and *vice versa*. Even now, in fact, they by no means confine themselves to three machines daily. As many as six or seven of their Spads and Breguets often leave Croydon during the course of one day.

Some interesting figures, as to passengers and goods carried, are supplied by the Messageries Company.

Calculating that 120 lbs. weight of goods equal in revenue one passenger, these figures show that 96 per cent. of their traffic is passengers and only 4 per cent. goods—which shows plainly that it is passengers who count.

Saturday's traffic was again heavy, 21 machines being needed to cope with the flow of passengers in and out. The K.L.M. sent two machines to Amsterdam. One of these had "Aircraft Transport and Travel" painted on the side of the fuselage, and was, indeed, the first of the two D.H.9's which have been purchased from the liquidator of that defunct company by the K.L.M.

### A Problem in Nationality

AN interesting point arose in the Customs House so far as this machine was concerned. Although it has been bought, and is now owned, by a Dutch company, it retains its British nationality until such time that it actually lands in Holland. If, by any chance, it had returned to Croydon without landing in Holland it would still have been British; but, as it duly reached Amsterdam on Saturday, it automatically changes its nationality and becomes Dutch.

The Vickers Viking "amphibian," which has been at Biggin Hill for some time being equipped with wireless, returned to Croydon on Tuesday, and flew over to the Pageant on Saturday morning.

I understand that Messrs. Vickers have received orders for a number of these amphibious machines from both the French and Spanish Governments.

### Wireless 'Phone Progress

ALL the Instone "air liners" which are used regularly on the London-Paris service are now equipped with wireless telephones, and continuous practice in direction-finding, and the general use of the telephones, is being carried out.

On several occasions, lately, communication has been kept up between a machine and Croydon until the former—flying on its journey to Paris—has reached as far as Abbeville.

It is, however, already becoming apparent that, as more and more machines are equipped with wireless 'phones, a special ground station will have to be provided at Croydon to deal solely with messages from aeroplanes. At present it is impossible to keep in continuous touch with the machines owing to the number of routine messages the wireless operators have to deal with.

The Sports' Club is becoming the institution at Croydon. Notice-boards have been erected, at various parts of the aerodrome, containing all the latest information. The matting wicket has been laid down. This necessitated over 100 barrow-loads of earth being moved. Screens have been made of old aeroplane wings, and answer their purpose admirably.

The ground is suffering from the general lack of rain, and the pitch is so hard that holes for the wickets had to be made on Saturday with a hammer and chisel. Owing to the number of applications for membership received from friends of the aerodrome staff, it has been decided, regretfully, that membership must be limited to those actually employed on the 'drome.

The Shell-Mex bulk storage petrol plant is now completed, but is still dry, and the Anglo-American are still doing all the business.

### Indian Potentate Flies from Paris

THE Grands Express have had another successful week. On Saturday the "Goliath" in from Paris carried among its passengers the Gaekwar of Baroda and two members of his retinue. Mr. Bouderie still continues, single-handed, to do all the work that other firms have staffs of anything up to half-a-dozen to accomplish.

The Surrey Flying Services are having a busy time. Joy-riding is very popular, and the Avros are kept busy at the week-ends, while quite a number of passengers are now forthcoming during the week.

On Saturday morning Capt. Muir returned in one of his joy-ride Avros from a little village near East Grinstead where there had been a coming-of-age celebration and village fête. He had been engaged there, by the organisers, to give exhibition flights. During the day he flew several people over to Hendon for the Pageant.

On Monday training commenced for the 'Varsity air race, and a number of strange young men invaded the aerodrome and Trust House, whilst S.E.5's began to dart about overhead.

# ROYAL AERONAUTICAL SOCIETY NOTICES



**Elections.**—The following Members were elected at a Council Meeting held on June 21: *Associate Fellow*, Capt. L. H. Mander, F.R.G.S.; *Student*, C. H. R. King; *Member*, Capt. the Right Hon. F. E. Guest, M.P.; *Foreign Members*, Lieut. Esteban R. Zanni, Lieut.-Cmdr. G. Hara, I.J.N. Scottish Branch—*Associate Member*, Donald Smith.

**Election of Chairman.**—Lieut.-Col. Mervyn O'Gorman, C.B., F.R.Ae.S., was declared duly elected Chairman-Elect at the Council Meeting held on June 21. He will assume office on October 1, when Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., the present Chairman becomes Vice-Chairman.

W. LOCKWOOD MARSH, Secretary

## SERVICE FUNCTIONS

### No. 2 A.D. Officers' Association

A most enjoyable day was spent by the members of this Association on Saturday, June 25, when they were entertained by the Commanding Officer and Officers of No. 3 Stores Depot, R.A.F., Milton.

### A Message from No. 8 Squadron

FROM Squadron-Leader R. L. Allen, commanding No. 8 Squadron, dated Baghdad, we have received the following note:—

"The present Officer Commanding and members of No. 8 Squadron thank the old members for their telegram of remembrances, and very much regret that they were unable to be at the reunion dinner.

"However, it is hoped that the dinner will become an annual affair, and as such the present Squadron will in their turn be able to meet those who have gone before.

"The Sender's name on the telegram arrived as 'Tutoomir,' and has provided some discussion as to its elucidation, and it would be of considerable interest if its hidden meaning might be solved."

## SIDE-WIND

In consequence of the many alterations and extensions carried out by Messrs. C. A. Vandervell and Co., Ltd., at their Acton works during the past year and the industrial crisis which followed, they have now decided to launch out into fresh fields of manufacture in addition to that of small hand tools, gauges, jigs, etc., which they have already announced. Evidently these new activities have been misunderstood in some quarters, for it has come to the knowledge of the firm that certain statements have been made that they intended to associate themselves with the manufacture of a car! This they wish us to most emphatically deny, as they have not, nor have they ever had, any connection directly or indirectly with the manufacture, financing or marketing of motor cars, for it must be obvious that the adoption of any such policy would be most detrimental and absolutely against their own interests, as manufacturers of electrical equipments for cars. They therefore ask us to give full publicity to the foregoing.

## IN PARLIAMENT

### Imperial Cabinet (Civil Air Communication)

VISCOUNT CURZON, on June 28, asked the Secretary of State for Air whether any steps are being taken to bring the aerial communication of the Empire, and the question of the future of lighter-than-air craft before the Imperial Conference.

Capt. Guest: These subjects will be discussed by the Imperial Conference, and a memorandum on the development of civil air communication within the Empire, which refers particularly to lighter-than-air craft, has been prepared for the consideration of the Dominion Prime Ministers.

### Airships

Mr. GILBERT, on June 30, asked the Secretary of State for Air how many airships are now in the possession of his Department and where they are housed; how many are of British construction and how many have been surrendered by the Germans; if his Department still have any further airships under construction; and, if so, how many, and what is the estimated cost of same?

Capt. Guest: There are six airships in possession of the Air Ministry. The "R.80" is at Howden; the "R.33" the "R.36," and the "L.71" are at Pulham; and the "R.37" and the "R.38" are at Cardington, the last-named having been built for the United States. Of the six, five are of British construction, and one, the "L.71," was surrendered by the Germans along with another vessel, the "L.64," which has been dismantled. There are no further airships under construction. The terms of the Government offer to dispose of the airships were issued as an Air Ministry Communiqué, of which I am sending my hon. friend a copy.

Col. Sir A. Sykes: Will the right hon. gentleman inform us which airship was floating over the House as Hon. Members came in this afternoon?

Capt. Guest: I think it was "R.33."

Lieut.-Com. Kenworthy: May we take it that in another month's time we shall have finally disposed of these costly productions?

Capt. Guest: Yes, sir. The final date is August 18.\*

\* This date should be August 1.—ED.]

## General Smuts and Our Future in the Air

At the reunion dinner of participants in the East African campaign, at the Holborn Restaurant, on July 1, when Capt. Guest, the Minister for Air, presided, General Smuts, in responding to the toast of his health, said that it meant something to the credit of the Force which took part in the campaign, that today one of his staff officers (Capt. Guest) should be administering the Air Service of this country. They looked to Capt. Guest to make a real success of our Air Service. They looked forward to that as one of the most important elements in the defence of this country and of the whole Empire.

## Sir E. Shackleton and Seaplanes for the Antarctic

DURING an interview with a *Times* correspondent, upon the subject of the Polar expedition under his command, Sir E. Shackleton, in regard to the use of seaplanes, said:—

"I consider that seaplanes or aeroplanes are now a serious factor in exploration. Undoubtedly, when the weather is calm, we can gain more information on the trend of the Antarctic coast-line or the position and extent of floating pack-ice from a height of 5,000 ft. in an aeroplane than would be gained in weeks of battering through the ice in the ship. One's horizon from the crow's-nest of the *Quest* is approximately 11 miles. From the seaplane we shall be able to enlarge this horizon so much that it may make all the difference to our manœuvring in the pack."

## AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: cyl. = cylinder; I.C. = internal combustion; m. = motors. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

### APPLIED FOR IN 1917

Published July 7, 1921

13,493. J. V. MARTIN. Aeroplanes. (164,364.)

### APPLIED FOR IN 1919

Published July 7, 1921

30,747. G. H. REID. Turning and banking indicator. (164,396.)

### APPLIED FOR IN 1920

Published July 7, 1921

5,744. GAS ACCUMULATOR CO., LTD., and A. G. WATSON. Light-signalling (164,436.)

6,479. W. S. SMITH and J. P. BROWN. Aircraft controls. (164,450.)

6,684. M. POTTIER. Floating-stations for aircraft. (148,739.)

7,183. CURTISS AEROPLANE AND MOTOR CORPORATION. Wing structures. (140,084.)

7,185. CURTISS AEROPLANE AND MOTOR CORPORATION. Flying-machines. (140,086.)

7,412. NORTH BRITISH DIESEL ENGINE WORKS, LTD., and J. C. M. MACLAGAN. Rotary combustion engine. (164,509.)

9,511. E. S. ULLMANN. Mooring apparatus for aircraft. (164,561.)

12,026. I. SANTOS Y SUAREZ and R. DE A. Y MENDIVE. Rotary I.C. engines. (164,598.)

17,597. RAUL, MARQUIS OF PATERAS PESCARA. Screws for helicopters. (146,257.)

23,370. J. and Z. FRECSKA. Aerial torpedoes. (164,634.)

27,311. G. SCHENKEL. Adjustable planes for aeroplanes. (164,656.)

If you require anything pertaining to aviation, study "FLIGHT'S" Buyers' Guide and Trade Directory, which appears in our advertisement pages each week (see pages xiii and xiv).

## NOTICE TO ADVERTISERS

All Advertisement Copy and Blocks must be delivered at the Offices of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, not later than 12 o'clock on Saturday in each week for the following week's issue.

## FLIGHT

The Aircraft Engineer and Airships

36, GREAT QUEEN STREET, KINGSWAY, W.C. 2.

Telegraphic address: Truditor, Westcent, London.

Telephone: Gerrard 1828.

## SUBSCRIPTION RATES

"FLIGHT" will be forwarded, post free, at the following rates:—

UNITED KINGDOM			ABROAD*		
	s.	d.		s.	d.
3 Months, Post Free....	7	7	3 Months, Post Free....	8	3
6 " " " " " " " " " " " "	15	2	6 " " " " " " " " " " " "	16	6
12 " " " " " " " " " " " "	30	4	12 " " " " " " " " " " " "	33	0

These rates are subject to any alteration found necessary under abnormal conditions and to increases in postage rates.

\* European subscriptions must be remitted in British currency

Cheques and Post Office Orders should be made payable to the Proprietors of "FLIGHT," 36, Great Queen Street, Kingsway, W.C. 2, and crossed London County and Westminster Bank, otherwise no responsibility will be accepted.

Should any difficulty be experienced in procuring "FLIGHT" from local news-vendors, intending readers can obtain each issue direct from the Publishing Office, by forwarding remittance as above.